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AMERICAN BEE JOURNAL



The Oldest Bee-Paper in America



Apiary of Mr. K. Kanda, of Japan.



Apiary of Mr. H. H. Moe, of Wisconsin.



Bee and Honey Display of The Golden Apiary, of Kansas, Mr. J. C. Frank, Manager.

American Bee Journal



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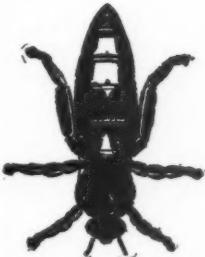
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CHAS. MITCHELL

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DR. C. C. MILLER, Associate Editor.

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EDITORIAL COMMENTS

How Sweet is Honey?

How does it compare with granulated sugar in sweetness? In cookery, how much honey should be used to sweeten as much as a given amount of sugar? Some say less honey than sugar is needed in cooking, but perhaps the majority say that more than a pound of honey must be used in place of a pound of sugar.

In order to have something definite and authoritative, the question was submitted to Dr. H. W. Wiley, the United States Government chemist—the man who has done so much in the interest of pure food, and who is loved for the enemies he has made. Here is the reply:

A comparison of sweetness of two dissimilar products is mostly a question of individual taste. The sugars present in honey are dextrose and levulose, which are the inversion products of sucrose. The sugar present in ordinary white sugar is sucrose. There are claims made by many that this mixture of dextrose and levulose is sweeter than sucrose while others offer the reverse view. Honey, besides having the sweetening properties of sugar, has a characteristic taste obtained from the flowers on which the bees have fed. So, from this, it would be hard to say which is the sweeter, and how much sweeter.

Respectfully,
H. W. WILEY, Chief.

And there you are. It seems, however, that we hardly need to give up the problem without some effort to solve it. Suppose a cake or other product of the culinary art be prepared with a given weight of sugar in it. Now make another exactly like the first in every respect except that instead of the sugar the same weight of honey be used. Now let some one supposed to be possessed of normal taste, blindfolded if you like, be allowed to taste each one a number of times without knowing which one he was tasting. If he uniformly says that the same one is sweeter each time, it will be pretty well settled that that particular one is sweeter than the other—at least to him. Then if the same test be made with a

number of other persons, including persons of different tastes, if there is entire agreement, the question may be fairly settled whether a pound of sugar or a pound of honey will go the farther in cooking. If there is no such agreement, then the failure of solution must be charged up to differences of tastes, for which the old saw says there is no accounting.

If there is a decided difference one way or the other, continuous experimenting ought to bring out a fairly definite answer to the question, "How much honey is equivalent to a pound of granulated sugar in cooking?"

Statistics of Bees in United States

The enumeration of bees in the United States' Census of 1910, is not very satisfying, since it gives only the bees on farms, omitting those kept in towns and cities. Even so it is not without interest. Compared with 1900, there is a falling off in the number of farms reporting bees, and also in the number of colonies. On the other hand, there is an increase in the valuation.

The number of farms in the United States reporting bees were—in 1900, 707,315; in 1910, 590,907—a decrease of 116,408, or a loss of 16½ percent.

Number of colonies in 1900, 4,258,239; in 1910, 3,462,520—a decrease of 795,719, or 18.7 percent.

Here are 5 States with the percent of decrease from 1900 to 1910:

Alabama.....	34	Ohio.....	35
Tennessee.....	36	Delaware.....	37
Texas.....	39		

There were 16 States having an increase of colonies. The following are given with an exceptionally large percent of increase:

Nevada.....	48	California.....	55
New Mexico....	63	N. Dakota.....	77
Dist. Columbia....	155	S. Dakota.....	218
Montana.....	250	Wyoming.....	350

Plainly a colony of bees was considered of more value in 1910 than in 1900—for notwithstanding the decrease in numbers the total valuation increased from \$10,179,839 in 1900, to \$10,372,976 in 1910. The average value of a colony in 1900 was \$2.39, increasing to \$3.00 in 1910.

A great variation occurs as to the value in different States. Some of the highest and lowest in 1910 are: Georgia, \$1.43; Alabama, \$1.58; Montana, \$5.09; District of Columbia, \$5.23; Maine, \$5.32; Massachusetts, \$5.32; Nevada, \$5.77; North Dakota, \$6.23.

Notwithstanding the fact that the decrease in number of colonies has been greater in Texas than in any other State, Texas still holds the distinction of having a larger number of colonies than any other State, with its 238,107 colonies. Two other States have to their credit more than 200,000 each—Missouri, 203,560, and California, 200,718. Then there is a drop to 188,998, credited to North Carolina:

In 5 States the bees are valued at more than \$500,000. They are:

California.....	\$728,000	Texas.....	\$675,000
New York.....	647,000	Missouri.....	585,000
Iowa.....	517,300		

Is there anything in these figures to help answer the question: Which is the best honey-State? A State with good pasture for bees is likely to attract more bee-keepers than one with poor pasture, and so to contain more bees. So, other things being equal, the State with more bees is the better honey - State. But if pasture be equally good in two States, and one State twice as large as the other, the larger State will pretty surely have the larger number of colonies. So size must be taken into consideration. Perhaps we may approach what we are trying to reach by finding out the number of colonies in a given area in each State. At any rate, it will do no harm to classify the States in that way.

Instead of learning the number of colonies to the square mile in each State, suppose we plant apiaries all over each State, placing the apiaries a trifle more than 3 miles apart, thus allowing 10 square miles to each apiary, and then find out the number of colonies in each apiary. The State with the largest number of colonies in each apiary

American Bee Journal

will head the list, and then we will go on down until we reach the State with the smallest number. That gives us the following table:

1. W. Virginia.....	44.66	26. California.....	13.24
2. Kentucky.....	37.87	27. Vermont.....	10.68
3. No. Carolina.....	36.17	28. Rhode Island.....	10.13
4. Tennessee.....	34.36	29. Kansas.....	8.98
5. New York.....	31.80	30. Mass.....	8.07
6. Delaware.....	31.27	31. Colorado.....	6.87
7. Missouri.....	29.28	32. Minnesota.....	6.79
8. Iowa.....	28.58	33. Florida.....	6.63
9. Pennsylvania.....	27.61	34. Louisiana.....	6.07
10. Illinois.....	27.51	35. Nebraska.....	5.89
11. Georgia.....	26.30	36. N. Hampshire.....	4.99
12. Alabama.....	25.68	37. Oklahoma.....	4.97
13. S. Carolina.....	24.67	38. Oregon.....	4.92
14. Virginia.....	24.50	39. Washington.....	4.90
15. Ohio.....	23.93	40. Utah.....	3.08
16. Indiana.....	22.27	41. Idaho.....	2.94
17. Dist. Col.....	21.57	42. Maine.....	2.30
18. Michigan.....	19.57	43. Arizona.....	2.10
19. New Jersey.....	18.07	44. S. Dakota.....	.84
20. Connecticut.....	18.03	45. New Mexico.....	.82
21. Arkansas.....	17.22	46. Nevada.....	.76
22. Wisconsin.....	17.07	47. Wyoming.....	.47
23. Mississippi.....	15.88	48. Montana.....	.43
24. Texas.....	14.77	49. N. Dakota.....	.07
25. New Jersey.....	13.42	United States.....	.44

Sealed Covers in Cellar in Winter

Editor Reidenbach, of Pfaelzer Bzg., is quoted in Maerkische Bzg. as saying concerning cellaring bees in America:

"The covers are left glued just as they were, so that the hive is tightly closed on top. That is just the greatest mistake. The cover must be pervious, so that the vitiated air may escape upward."

One wonders whether Editor Reidenbach can be familiar with wintering bees in cellar. As wintered outdoors in Germany, with very small entrance, there might be trouble with sealed covers. But with the very large opportunity for the entrance and exit of air at the bottom of the hive, as generally allowed in cellars in this country, there is no trouble whatever about the escape of vitiated air at the bottom. At any rate, the very great success obtained in cellars with sealed covers, when all other conditions are favorable, outweighs all the theories that may be advanced against it.

Winter Stores of Bees

If I have to feed, and have only a limited number of colonies to prepare, I would not feed until close to the time when we *may* have permanent cold weather. I would give a syrup made of $2\frac{1}{2}$ pounds of granulated sugar to one pound of water brought to a boil; and if I wanted to do what I felt sure would be the best, I would add a teaspoonful of tartaric acid to each gallon of syrup. There is then little need of evaporation by the bees, and they would store the syrup in the midst of the cluster. No better stores can be provided for bees during winter confinement. In my estimation, if a bee-keeper has only an early surplus-honey flow, such as clover, his bees are really never in proper condition for best wintering without feeding; because if they have enough stores in the hive (which, as a rule, is not the case), it is not in the place where the bees can keep it in the best condition.—R. F. HOLTERMANN, in Gleanings in Bee Culture.

Will this belief and practise of Mr. Holtermann bear scrutiny? As a rule, he says there is not enough honey in the hive for winter stores where the bees get nothing later than clover. If there is enough gathered from clover to yield a surplus, why should not the bees store enough of it for winter? Do they not always look out for their own needs, carrying the honey into the supers only when there is no more room in the brood-chamber? Certainly; but how much room is there for

winter stores in the brood-chamber while the clover flow is on? During that flow the queen is laying heavily, in many cases keeping the equivalent of 6 frames entirely filled with brood. Pollen enough to fill one frame is also present. In a 10-frame hive that leaves only 3 frames for honey, and in an 8-frame hive only a single frame. Honey enough may have been gathered, but it is in the surplus apartment. The instinct of the bee is not at fault; it has laid up enough for winter, but man has interfered and taken away as surplus the honey stored above, and now man must make up for that interference by feeding.

In case there should be enough clover honey in the brood-chamber for winter, it will be in the outside frames and at the upper part of the others. After the close of the harvest the bees have plenty of time to empty the honey from the outer frames and store it centrally. Evidently Mr. Holtermann does not feel he can trust them to do that, and possibly he is right, for the bees are slow to unseal honey and move it to a different place, except in sufficient quantity to supply their needs for a short time ahead.

Where there is a later flow the case is quite different. Gradually the brood-rearing diminishes, and the honey is stored more and more centrally, right where it is best to have it.

Uncapping Combs for Extracting

The Australasian Bee-Keeper has a symposium upon this subject. There is a general agreement in emphasizing the importance of having the uncapping-knife sharp. There is difference of opinion as to having the knife hot or cold, with a preponderance of opinion in favor of the hot knife. A. P. Young takes this philosophical view:

For the beginner, a hot knife is undoubtedly the best, as it facilitates considerably the process of uncapping, as any one who has tried both ways can testify. But for the expert the question arises: Is it worth the trouble? If all the appliances available for heating of the knives are a stove and a vessel of hot water, then I should say use a cold knife and maintain a keen edge. On the other hand, however, if one has means for heating knives with a modicum of trouble and expense, under these circumstances it would pay to heat the knife. A bee-keeper then must judge by his own circumstances which is the best plan, and allow others the same privilege.

One writer says: "I notice in the American bee-papers that the knife which is heated by steam is discarded." Is it?

For shallow combs J. F. Munday uses a straight butcher-knife, and a down stroke. Otherwise a curved knife with an up stroke. He very strongly favors a thick handle and a narrow blade, as a thin handle or a wide blade requires much more strength. Among the others there is a difference of practise as to using the down or the up stroke.

Swarming Problem Among Bees

There seems to be a strong feeling in the minds of many that it is idle to try to breed toward a strain of bees with a diminished tendency toward swarming. Indeed, it may not be too strong an expression to say that some are bitterly opposed to having anything said

that favors the attempt to work toward a non-swarming strain. Now is there anything really wicked in trying to produce non-swarmers? Even if such a thing be never attained, where is the great harm in trying for it? Why is it so much worse to advocate non-swarming bees than to advocate non-sitting hens? Once there were no non-sitters, but careful breeding brought them? Why not make the same attempt for non-swarmers?

It is not fair to insist that non-swarming bees must be those that never swarm under any circumstances. Non-sitting hens sit—sometimes. If we can breed out the swarming habit as nearly as the sitting habit has been bred out, will it not be worth while?

In view of the general tendency to decry any advocacy of non-swarming bees, it is refreshing to find in the Irish Bee Journal an article by G. W. Bullamore, in which he closes by saying:

But I can see that some strains of bees are less sensitive to the conditions which produce the desire to swarm, and also that, in matters of heredity, bees are no exception to the rest of creation.

And that is why I think that careful breeding is the only true method of dealing with the problem of excessive swarming.

In the course of his article Mr. Bullamore says:

Another statement is that a swarm will not issue if the colony is headed by a queen of the current year. Dr. Miller says that he tried this, and that it did not answer. He thinks, however, that the rule given by Gravenhorst may be correct. According to Gravenhorst, a colony will not swarm with a queen of the current year if it is a queen of their own rearing.

But, unfortunately for this rule, Dr. Dzierzon tells us that the strain of bees in the health districts of Germany invariably rear drones from a queen of the current year, and not infrequently sends out a swarm led by such a queen. The method of management has exterminated the non-swarming bees, and has favored excessive swarmers.

It seems that I did not make myself entirely understood. Let me go somewhat into particulars.

It is probably generally agreed that the age of the queen is quite an important factor in the swarming problem. Under certain conditions a 3-year-old queen will swarm when under precisely the same conditions a 2-year-old queen will not swarm. It is also known that some races of bees are more given to swarming than others. This being the case, it is not hard to believe that Gravenhorst may have had bees so little inclined to swarm that no swarms would issue with a queen until she had wintered over one winter, while Dzierzon would find it different with heath-bees, which are great swarmers.

But another very important factor appears in the case, and that is the condition of the colony into which the young queen is introduced. It had been that it was the rule that a queen would not swarm during the same season in which she was born. There were those, I think, who had found no exception to that rule. Taking the rule as one that admitted no exceptions, I said to myself, "Now all I have to do is to introduce into each colony a queen only a few days old, and then good-by to the swarming trouble." So about the time colonies were thinking of swarming I introduced a number of young queens, and then it was that I found "it did not answer," for there was swarm-

American Bee Journal

ing galore. One special case may be mentioned. I am not sure now whether the colony was just on the point of swarming or had swarmed and returned. At any rate I said, "I'll fix you. I'll give you a queen that has just begun laying, and then you can't swarm." I gave the young queen, and the colony was all right for, I think, 2 days. Then it swarmed, and the queen hadn't been yet laying a week! So you see the rule doesn't work if the colony already has the swarming fever.

But the rule is—and I value the rule greatly—that if a young queen be given to a colony which has not the swarming fever, that colony will not swarm that same season. With a strain of bees greatly given to swarming, there might be so many exceptions as to make the rule worthless. I can imagine a strain of bees so little given to swarming that there would be no exceptions. I think there were never any exceptions with me except one year, and then there were 2 or 3 exceptions.

But how may we know in any case that no swarming fever is present? I don't know that I can answer that, but I think that it is pretty safe to say that when a colony has been queenless a week or 10 days, with all queen-cells destroyed, there will be no immediate danger of swarming if a laying queen be introduced. After a month or so there may or may not be swarming if the queen be more than a year old.

Just how far it will answer may be understood if I tell what is the practise here. Queens being clipped, it is not hard to tell whether there has been a change of queens. Each colony is examined before there is any danger of swarming, all queens with whole wings are clipped, and if at any future examination a laying queen is found with whole wings, she is clipped, and in the record-book on the page for that colony is written the word "PASS," and no more attention is paid to that colony that season so far as swarming is concerned. That same word "PASS" is also written if we have given a young queen to a colony after it has been queenless a week or 10 days. To be sure, there is a bare possibility that a passer may swarm, but the occasion is so rare that it is not worth while to take it into account.

C. C. M.

Help Get a U. S. Parcel Post

Practically every nation has a Parcel Post System. Exhaustive reports on Parcel Post Systems of all nations have been prepared under the direction of Jonathan Bourne, Chairman of the Senate Committee on Post-Offices and Post Roads, 1911, showing that our country is away behind in this matter. From the data we learn that the United States has the lowest weight-limit for parcels carried by mail, and the highest charge per pound of any country in the list. Our Goverment makes a flat charge of 16 cents per pound for anything carried by Parcel Post, and limits the package to 4 pounds in weight.

Russia will carry packages up to 120 pounds, charging 13 cents for 2 pounds and 23 cents for 7 pounds. China, with a territory nearly one-half larger than ours, carries 4 pounds for 30 cents, and 22 pounds in one package for a dollar.

To mail 22 pounds in our country we would have to put the material in six packages and pay \$3.52 postage.

Germany has the zone system, by which charges vary according to distance and weight. That country will carry an 11-pound parcel 10 miles for 6 cents, and to any post-office in the empire for 12 cents.

More than a score of other nations could be added, but enough has been given to show how antiquated our postal system is in the matter of transporting parcels for the people.

Recently, W. A. Henry, Emeritus Professor of Agriculture, in the University of Wisconsin, Madison, spent some time in Washington attending hearings on Parcel Post held by the Senate Committee referred to above. He soon found that powerful interests, well organized, were opposing a General Parcel Post System by every possible means, especially by flooding Congress with petitions in opposition and by urging one-cent letter postage. Do you want from the present Congress a General Parcel Post System such as all other civilized people enjoy? Then spend 6 cents in saying so by letters to your two senators and your representative.

March 18, 1912, has been set apart as Farmers' Parcel Post Letter Day—a day on which farmers all over our land are to write letters to their congressional representatives in Washington, asking for an up-to-date General Parcel Post such as all other civilized countries enjoy—one not limited to rural routes alone. Gradually the American farmers are learning the value of co-operating and working together in a common cause. Here is a chance for

the first nation-wide lesson in teamwork by farmers, all acting together as one man for the common good.

Do not expect your congressmen to vote for a Parcel Post when they are all the time hearing from the opposition and not a word from you. Petitions are the lazy man's way of discharging the duties of citizenship. Write three letters and get your neighbors to write, and be sure to oppose one-cent letter postage until we have a General Parcel Post.

Join with the other farmers all over the land in again writing letters to your congressmen. Ask for a General Parcel Post, and not one limited to rural routes. Only by co-operation and timely effort can the friends of Parcel Post win their cause.

Take down your calendar, Mr. Bee-Keeper, and draw a circle around March 18, 1912—the *Farmers' Parcel Post Letter Day*. Get your neighbors to join in the movement, so that on March 18, 1912, from 4,000,000 rural mail-boxes there will be gathered letters and postal cards which, pouring into Washington in a great flood, shall convince the members of Congress that at least the American farmers and others are alive, and in dead earnest in their call for an up-to-date General Parcel Post.

We believe that the right kind of a Parcel Post in the United States would be a grand thing for the rural producing class. Yes, it would be a great benefit for all classes—both consumers and producers. Let us all unite, March 18th, and "go after" Parcel Post by simply overwhelming the members of Congress with urgent letters as suggested.

MISCELLANEOUS NEWS ITEMS

The Wisconsin Convention.—The annual meeting of the Wisconsin State Bee-Keepers' Association was held at Madison, Feb. 20 and 21, 1912. It was our pleasure to be present. Mr. C. P. Dadant came to Chicago and went with us. We had a delightful round-trip together. There were about 30 beekeepers present, a number of them being the best convention men in the ranks, such as Messrs. France, Wilcox, Huffman, Dittmer, Ochsner, Allen, Lathrop, and others.

Lloyd France, a son of N. E. France, who is attending the Wisconsin College of Agriculture at Madison, was also present, and gave an interesting address on what the various agricultural colleges of America are doing (and not doing) for bee-keeping. He also said that he thought the time was ripe for the installation of an experiment apiary at the college where he is studying. Prof. Sanders, the State Entomologist, is deeply interested in the subject, and is giving every encouragement to the plan, which we have no doubt will be put into effect the coming spring.

"Lloyd" is a veritable "chip of the

old block," and gives promise of doing most excellent work for the advancement of bee-culture. Having the advantage of not only his own bee-experience, but also that of his father's, gives him a splendid beginning, which, if followed up with his characteristic thoroughness and efficiency, will make him one of the leaders of apiculture in a very few years.

The Wisconsin Bee-Keepers' Association voted to continue its affiliation with the National Association, which now makes it one of the branches as provided by the new National Constitution. We were glad to see this action passed with such evident unanimity. We believe that the Wisconsin Association was the first to join the National as a body, many years ago, and has always continued its close relationship.

Mr. N. E. France, treasurer of the National Association, who has done so much for the bee-keepers and bee-keeping of the United States, being relieved of much of the burdensome work he has carried so many years for the National, is planning to devote himself more extensively than ever to his be-

American Bee Journal

keeping business. If a large section of country is not sweetened with his honey during the coming season, and those that are to follow, it will not be his fault. He is still the inspector of apiaries for Wisconsin, and doubtless is the best informed bee-keeper in this country on bee-diseases. Mr. France has earned a place in American bee-keeping that will always command the highest respect and honor of all bee-keepers everywhere.

The officers elected for the ensuing year are as follows: President, Jacob Huffman; Vice-President, F. Wilcox; Secretary, Gus Dittmer, of Augusta; and Treasurer, A. C. Allen. Delegate to the National convention, A. C. Allen; alternate, Harry Lathrop.

We expect to publish a brief report of the Wisconsin convention in the near future. There were some most excellent papers read, and the secretary, Mr. Gus Dittmer, knows how to boil down the discussions and give the real cream.

European Foul Brood in Honey.—This question was asked in Gleanings in Bee Culture and referred to Dr. E. F. Phillips for answer. He replies:

The question raised is, of course, important; but I know of no way to answer it definitely. The cause of European foul brood is not known, and therefore we would not know what to look for in the honey. Furthermore, even for American foul brood (which we know is carried in honey) it is difficult to find the organisms. Some practical experiences would certainly indicate that European foul brood is carried in honey; but, on the other hand, the success which is sometimes experienced with the dequeening method of treatment makes this somewhat questionable. Every phase of this disease is a puzzle, and one who can speak definitely of it usually does not know.

No More Bees In Imperial.—The Imperial county board of supervisors, at its last meeting passed an ordinance for the protection of the bee-industry of that county. During the winter over 1300 colonies were shipped in, making a total of nearly 11,800 in the county, an increase of 5000 over last year. Basing the estimate on last year's losses, this spring should find 10,000 there. Owing to the Government report of the presence of American and European foul brood in other counties, no more bees will be permitted to be brought into that county. So says A. F. Wagner, Inspector of Apiaries of Imperial County, California.

The G. B. Lewis Co., of Watertown, Wis., are pushing things along in the bee-supply manufacturing line as ardently as ever, if not more so. On the return trip from attending the Wisconsin convention Feb. 21st, Mr. C. P. Dadant and the writer stopped off at Watertown between two trains in order to call on the Lewis Company. Mr. Geo. C. Lewis, the president and treasurer, was in his office, also Mr. L. W. Parks, the affable and thorough-going superintendent of the factory, and Mr. G. E. Bacon, the sales manager, were "on their jobs."

The Lewis Company have certainly done wonders in rebuilding their factory since the fire which destroyed it a few years ago. They purchased a 5-

acre tract along the railroad line, and have almost covered the whole of it with buildings, lumber yards, etc. They have about a half-mile of railroad track of their own. They are in a position to turn out their famous "Beeware" for the whole world of bee-keepers, or as many of them as want to use it. The G. B. Lewis Company are now in their 38th year of successful manufacture of bee-keepers' supplies, and merit their large success.

"Forty Inches and a Bee."—Hon. Eugene Secor, of Forest City, Iowa, found the following couplets in the Live Stock World, of Chicago, and sent them in, saying, "*'Tis intensive farming intensified.'*

"They used to have a farming rule
Of forty acres and a mule.

"Results were won by later men
With forty square feet and a hen.

"And nowadays success we see
With forty inches and a bee."

"Goddess of Plenty" in Honey.—At the Panama-Pacific International Exposition of 1915, at San Francisco, Calif., will undoubtedly be many novel and unique exhibits. One of the latest ideas comes from San Mateo Co., Calif. Christian Stader proposes to erect a statue of the "Goddess of Plenty" made of honey. Mr. Stader is a bee-keeper, and expects to have the bees build the statue, and offers to stand it up in space allotted to Santa Clara county for its exhibit. This would be an unusual exhibit and attract considerable attention, especially on the part of bee-keepers.

"Carbonal" for Robber-Bees.—We have received the following from Massachusetts, referring to the stopping of robbing among bees with carbolic acid:

I noticed in the January American Bee Journal, an article on page 6, headed, "Carbolic Acid in the Apairy." For the benefit of my fellow bee-keepers, I would like to give the following:

One day last summer, Mr. O. F. Fuller noticed some bees robbing. He at once commenced looking for something to prevent or stop them, and noticing on a table in his house a sample bottle of "Carbonal"—a disinfectant—he put some in water and sprayed the front of the hives, where the bees were robbing. The trouble was soon over, and everything quiet within a very few minutes. Since Mr. Fuller told me of his experience I have tried it, and have always had most gratifying results, and would not be without it.

FRANK M. KEITH.

We suppose "carbonal" can be secured at any drug-store. We hope others will try it the coming season and send in reports for publication.

The National and California.—We have received the following letter from Mr. Sebastian Iselin, of California, referring to the action of the California State Bee-Keepers' Association:

EDITOR AMERICAN BEE JOURNAL:—

I am enclosing a clipping from a local newspaper's editorial on the withdrawal of the California Bee-Keepers' Association from the National Bee-Keepers' Association. Personally, I regret this action very much, because it seems to me, if at all, it ought to have been taken before the new Constitution was adopted by the National, and not just now, at the time when a new order of things is about to take place; and the officers ought to be encouraged in every possible way.

Let us hope that the National will soon prove that the change voted upon last fall was of such importance that the California Association may see its mistake, and return into the ranks of the National Association.

SEBASTIANISELIN.

Stockton, Calif., Feb 12.

The clipping referred to by Mr. Iselin reads as follows:

BEE-KEEPERS SET AN EXAMPLE.

The withdrawal of the bee-keepers of California from the National Association on the ground that they received absolutely no benefits, and, on the other hand, found it a source of expense, taking funds which otherwise could be very profitably used in their local affairs, ought to serve as an eye-opener to many other organizations in the State affiliated with National bodies. There are hundreds of National bodies having no more excuse for their existence than the fact that there is just so much loose coin in the country, and that they might as well have a share of it for their own ends. It would be well to ponder long over affiliating with National bodies. Ordinarily State organizations can accomplish as much as more pretentious ones, by reason of the fact that they can concentrate their whole force on their own immediate territorial needs, and avoid the handicap which too often goes with the efforts of vast bodies with varying ends to serve.

We are quite surprised at the action of the California State Bee-Keepers' Association. We believe at one time there were more members of the National Association in California than in any other State. If all the State Associations were to imitate California in its recent move, there would soon be no National organization at all. We have been led to think that California was really the center of the co-operative organizations, and now for the California State Bee-Keepers' Association to withdraw from the National seems to be contrary to what we might reasonably expect from the the bee-keepers of that State. It seems to us that they should stand loyally by the National Association, as should every other local organization of bee-keepers, in order to make the National of larger benefit to bee-keepers everywhere under its new Constitution than it has ever been before, although it has done some most excellent work in the over 40 years of its existence.

Of course, the National Association will go right on and do its best to merit the co-operation of bee-keepers everywhere. We join in the hope expressed by Mr. Iselin, that the "California Association will see its mistake and return into the ranks of the National."

Bee-Disease in South Africa.—The "Isle of Wight" disease seems to baffle investigation, although it keeps on its deadly course. Now a new trouble seems to have broken out in South Africa, as reported in the South African Bee-Keepers' Journal. Combs contain thousands of dead larva, but careful analysis fails to show the presence of the usual culprits in infectious diseases. A sample of the defective brood was sent to our Dr. Phillips, who reports:

"The sample of brood arrived in excellent condition, and in view of the importance to the bee-keepers of your country has been subjected to an examination much more careful than is usual for routine samples.

The irregular appearance of the brood would indicate an abnormal condition, but the gross appearance and microscopic and bacteriological examinations all fail to show any evidence of either of the infectious diseases."

American Bee Journal

California Convention.—The Los Angeles Express, an evening newspaper published at Los Angeles, Calif., contained considerable reference to the meeting of the California State Bee-Keepers' Association in that city, Feb. 6th. It also had a large picture showing 8 of the members, including B. G. Burdick, the president of the Association, and also Delos Wood, one of the oldest bee-keepers in that State.

California bee-keepers are waking up on the organization question. They have some plans for the future, which we trust they will be able to carry out. That State is one of the best organized among its fruit-growers of any in the Union. If the bee-keepers are to make the largest success they must also organize. We hope, however, that all of the local organizations throughout that State will also become branches of the National Association, the new Constitution of the National now making provision for such procedure.

Bee-keepers throughout the country will doubtless watch with interest the progress made along organization lines among their brethren in California. We hope that the American Bee Journal will be kept informed concerning everything connected with the great things California bee-keepers are expecting to do.

Cement-Coated Nails in Honey-Case Tops.—The C. C. Clemons Bee-Supply Co., who are also large dealers in honey, send us the following on the use of cement-coated nails to fasten the tops of honey shipping-cases:

EDITOR AMERICAN BEE JOURNAL:—We want to call your attention to one thing which we think would be a good thing to advocate, and that is for honey-producers to stop using cement-coated nails in putting the tops on their honey-cases. These tops have to be removed in showing the honey, and where cement-coated nails are used, it splits them all to pieces, and when put back it makes a bad looking case, and sometimes a customer thinks this case has been refused because the top is broken. We notice that this is not the rule with all shippers, but about 85 percent of what honey we have received this year has been put up this way.

C. C. CLEMONS BEE-SUPPLY CO.

This is indeed an important matter—one of the little things that means very much. We had noticed the same trouble. It is practically impossible to remove the top of a shipping-case without splitting it, when cement-coated nails have been used. It is all right to use such nails on all the rest of the case, but not when nailing on the top or cover after it is filled with honey. The same thing might also apply to boxes for 5-gallon cans.

We trust that all readers of the American Bee Journal who ship comb honey will remember this, and hereafter use plain nails instead of the cement-coated kind when nailing on the tops or covers of shipping-cases.

LATER.—Since putting the foregoing in type, we learn that the G. B. Lewis Co. put in a few plain wire nails for nailing on the covers. But it would be a good thing to have a printed slip accompanying the nails calling attention to it.

The Northern Michigan Bee-Keepers' Association will hold its next annual meeting at Traverse City, Mich., March

13 and 14, 1912. Whiting Hotel will be the headquarters. Special rates have been arranged for, and also the Hotel's parlor on the second floor has been offered to us for the meetings. A good program will be provided, and we would like to see many new faces. If you are so you can come, better do so. We are sure you will have a pleasant time.

IRAD. BARTLETT, Sec.
East Jordan, Mich.

The Worcester County (Mass.) Bee-Keepers' Association is perhaps the only organization of bee-keepers in America that meets monthly. They gather in Horticultural Hall, at Worcester, Mass., at 2 p.m. the second Saturday of each month except July and August. The secretry is O. F. Fuller,

of Blackstone, Mass., who can furnish a copy of the program, and any other information desired in connection with the meetings of the organization.

The Northern Texas Bee-Keepers' Association will hold its next convention at Greenville, Tex., Wednesday and Thursday, April 3 and 4, 1912. All bee-keepers are cordially invited to attend. We expect a great meeting.

W. H. WHITE, Sec.
Greenville, Tex.

The South Dakota Bee-Keepers' Convention will be held in the Court House in Sioux Falls, S. Dakota, March 20 and 21, 1912. All bee-keepers are urged to be present.

BEE-KEEPING FOR WOMEN



Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Mrs. Margaret Wilson—An Aged Honey-Consuming Queen

Feb. 15, 1912, my mother—Mrs. Margaret Wilson—celebrated the 93d anniversary of her birth. And a lovely birthday she had. Such a shower of congratulations in the shape of cards, letters, and presents.

It is not given to many to be able to look back over 93 birthdays with a mind as clear, and a body as perfect as she possesses. She is very hard of

to pick them up and read when she wants to; but never a murmur. Of course, we read them to her, but that is not the same as being able to read oneself. She is rarely idle, spending her time knitting, as that is all she can do now.

She is not old in spirit, and takes the keenest interest in everything around her, and she is a great favorite and chum with her grand-children. Her children—well, it would be difficult to find words to tell how much they love her. With such a mother as an example, one feels there is much to live up to.

Strangers find it difficult to believe she is so old, always remarking on the freshness of her complexion, and the lack of wrinkles. One lady while visiting us sat looking at her for a while, and then said, "Why, if I could grow old as gracefully as that, I would never fear growing old."

She is the honey-eater of the family. Never gets tired of it. Just how much of her wonderful vitality is due to honey it is hard to tell, but I am sure it is good for her. This has been a very hard, cold winter, but she has never had even a cold.

EMMA M. WILSON.



MRS. MARGARET WILSON.

hearing, and within a year her eyesight has failed so that she has not been able to read as formerly. She has always been a great reader, and since giving up active life she has spent many happy hours with her books, often reading a favorite over many times. It must be a trial not to be able

[“Mother” Wilson is also the friend of “ye editor.” We have known her for over 20 years, and have often met her in Dr. Miller’s delightful home, where she is one of the trio of “queens” that live so happily together there. We are glad to be able to present to our readers her picture, and also the accompanying sketch by Miss Wilson. The picture was taken only a few months ago, but is just as Mother Wilson looks today. May she live to be a hundred—“and then some.”—G. W. Y.]

Carbolic Acid to Clear a Super of Bees

Fashions prevail in the management of bees as well as in other things. In England it is the fashion to use cloths

American Bee Journal

wet with a solution of carbolic acid for the purpose of driving bees down out of supers. In this country it is seldom mentioned. It is therefore a matter of no small surprise to learn that in this country there is a bee-keeper thoroughly familiar with the use of carbolic acid as a super-clearer, and who used it some time even before the bee-escape now in common use was known. That bee-keeper is a sister, and that sister none other than that experienced and practical bee-keeper, Miss Mathilde Candler. She writes:

I have just read the editorial regarding the use of carbolic acid in the apiary, and as I used it when removing comb-honey supers from the hive, regularly and for a good many years before the advent of the Porter bee-escape, I may be able to give some testimony that might be of interest.

I used it only in harvesting the honey. I poured a small quantity of acid—about a spoonful or so—into enough water to wring out 4 or 5 cloths (probably about a gallon of water). If too much acid is used it burns the hands; if too little, its effect is not lasting, and bees will quickly return to the supers unless they can be pried loose and removed rapidly enough.

After being wrung out, each cloth was spread out over a super under the cover. By the time the last cloth was on, the first super was cleared of bees, if the solution was strong enough, and could be removed.

It works much more rapidly and sure than the escape; in fact, it is done in a minute, and there is no failure through stoppage of the escape-hole, as is sometimes the case with bee-escapes.

But it has one defect, which caused me to abandon it, though I have sometimes thought of practicing that method again. A large amount of unsealed brood was lost by it. When I opened the hive I found the larva on the sides of the cell, at the edge, or even on the floor of the hive. Only an agony supreme could have induced that young brood, naturally inactive, to move about in this way. Possibly if I had used fewer cloths at a time, it would have worked better, as they would not have remained on so long.

Cassville, Wis. MATHILDE CANDLER.

An objection to the use of carbolic acid in this way—perhaps urged only by those who have not tried it—is the danger of having the flavor or odor of honey affected thereby. As Miss Candler makes no mention of this, likely she had no trouble on that score. Strangely enough, the objection she does make has never been mentioned in the books and periodicals of England, if memory serves. Can it be possible that no British brother or sister has ever used a solution strong enough to kill the brood? Or, are they less careful observers across the water than our American sister?

We are much indebted to Miss Candler for her interesting and valuable communication, and it is just possible, considering how quickly and thoroughly the acid works, that we may learn just how strong to make the solution, and how long a time to allow the cloth to remain, so that it shall do its work effectively and yet not injure the brood. In that case it may yet become the vogue on this side of the water.

Wintering Caucasian Bees

Arthur C. Miller says in Gleanings in Bee Culture, that the temperature outside the cluster inside the hive is the same in winter as that outside the hive. I thought of it when I went out to break the snow-crust in front of my hives, and found, as we always do, a large space or chamber in front of the entrances, where the warmth of the cluster in the hive had melted the snow outside. I think a raging blizzard would not affect those bees in the least. But our hives are not always covered out of sight with snow,

especially in the spring when they are filling with brood and most need protection.

It seems to me that Mr. Holtermann has given us something on wintering that is fully as valuable as Mr. Doolittle on queen-rearing, or Mr. Alexander on swarming and increase. Anyway, I have not been successful in cellar-wintering, and I know that many others have not, and his ideas appeal to me. There are one or two drawbacks, however, to Mr. Holtermann's plans. In the spring you will have to stand in the flight of the bees, either the swarm you are working with or its next neighbor. No doubt this is better than drifting. Then I see no way to carry on stimulative feeding when one desires, but perhaps with the extra-warm bed-room and plenty of stores, it would not be so much needed.

We hear so little about the Caucasians that it seems those who have tried them must have been disappointed and given them up. This was my experience. My chief trouble was, they would not enter the comb-honey super, and seemed bent on swarming, but they lived over winter and built up in the spring under conditions that no other bees would survive. The queen was received too late in the fall to build up a strong colony for winter, and they went into the cold weather with insufficient stores; also, the hive was not well protected.

Along in March, perhaps two weeks before they had a flight, I opened the hive and poured a few tablespoonsful of warm sugar syrup right on the cluster. They were excited, yes! but it did not seem to hurt them, and they commenced to build up. I continued to feed them irregularly, and they soon went away ahead of any of my Italians. Later I reared a number of young queens. Later I reared a number of young queens. Afterwards requeened them all with Italians, because they would not store comb honey.

Now I am going to try them again. We want early brood and young bees, but are always cautioned not to wear out the bees and run the risk of losing brood in a sudden cold snap by too early stimulating the bees to rear brood. Why could not an Italian and Caucasian queen be kept side by side in a Holtermann wintering-case on a hand bottom-board, thus supplying early Caucasian bees to the Italian queen? No great harm done then if some of the old Italians did die with more than enough young bees to take their place.

There is no denying that early brood and bees mean honey and money, even if stores are used. We know that the Italians are no good to rear brood in March or April, but it doesn't seem to injure the constitution or disposition of the Caucasians to get up early on a winter morning, light the fires and go to work.

They will rear brood on short allowance if they must, but will make a good return for a full table. It costs no more stores to rear bees when you want them in early spring than when you don't want them after the

honey-flow is over. As in a Holtermann wintering-case, you can not use the back entrance, a Porter bee-escape would have to be arranged at the front entrance of the Caucasian hive to shift the bees when they were wanted in the Italian hive. This could not be done except on some day when the bees were flying, but there are always such days in the last of March and in April. Brood-rearing in the Caucasian hive might be checked for a time, but there would be young bees to care for the brood, the hive being protected with the wintering case; and the Italians would certainly be gainers.

D. E. LIGHT.

Is it not just possible that conclusions may be drawn without sufficient data on which to base them? You say your chief trouble with Caucasians was that they would not enter the comb-honey super. If others have found the same objection it has escaped attention. It is just possible that there was something exceptional in your case, and that upon fuller trial you would find that Caucasians would take to supers as kindly as other bees. It would be of interest to know what inducements you offered in the way of baits to coax the bees into the supers. There is probably no race of bees that will be satisfactorily prompt at entering a section-super which has in it nothing beyond foundation. That is, for the first super. At least one bait-section should be in the first super; that is, a section that has been partly or wholly filled the previous season, and then the honey emptied out by the bees in the fall. If you gave such bait to your Caucasians, and they then refused to enter the super when other bees were doing work at surplus-storing, it remains to be learned whether Caucasians in general act in that way.

Again, you say Italians are no good to rear brood in March or April. That raises the question whether there may not have been something exceptional in your experience, for that objection to Italians has not been at all general. Certainly in this locality they build up early enough to do good work as surplus-gatherers.

We will all be interested to hear how you come out in your further experience.

CANADIAN BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

The Blending of Honeys

As to the blending of honeys mentioned on page 48 by Mr. A. C. Miller, without taking the trouble to look up the matter, I can not recall the man spoken of who was doing such a rushing business in the Toronto markets. Without questioning the statement in the least, I would remind Mr. Miller that "one swallow does not make a summer," and even if one man does blend his honey, that is not proving it to be a good practise.

As a matter of fact, the term "blending" is almost a misnomer so far as Ontario honey is concerned, for, generally speaking, about all our white honey is from clover and basswood,

while our dark honey is from buckwheat. Some years even our clover is a little off in color, and at such times we find we are "up against it" when it comes to selling it in a market where whiter honey is being offered. By this I mean that some localities will give whiter clover honey than others in some seasons. Generally speaking, the whiter the honey the better article it is, other things, such as body, etc., being equal in all samples. The public have learned this, and I do not blame them for wanting a white honey—indeed, I would prefer that grade myself if wanting any.

If I remember correctly, Mr. Miller said that the honey in his State varied very much in color, flavor, etc., and I

American Bee Journal

suspect they get very little *really good* honey. That being the case, they import some good stuff from other localities to mix up with theirs to make it salable—probably they might get some from Canada if it were not for the duty. That being the case, Mr. Miller, we can overlook your ideas on "blending," and we will give you full license to go ahead and do all the "mixing" you care to.

Most Severe Winter on Record

In speaking of the weather (page 48), I am made to say that on Dec. 17th it looked like a change to warmer weather. Of course, it should have been Jan. 17th, as the copy for February was sent on that date. Sorry to say that my prophecy as to warmer weather proved to be otherwise, and since that date we have had the most severe winter on record—officially, the Toronto observatory says the coldest January in over 50 years, and February up to date (Feb. 18th) looks as if it was going to break another record. Saturday last was the coldest day in 17 years, according to the Toronto official figures—19 degrees below zero. But that is letting us down easy, for all "unofficial" thermometers registered from 22 to 34 degrees below.

As to how this will affect outdoor bees remains to be seen, but judging by external conditions in my own apiaries so far, I do not anticipate trouble unless this awfully cold weather continues too long. I have 20 colonies at the home yard in hives made with double boarding, with heavy paper between, and with them it will be a pretty hard test. One trouble has been to keep the entrances free from ice, as the moisture condensing on the sides and ends of the hives would run to the front and cause trouble. The less the protection the hives have the larger the entrance has to be, and this is (to me) a pretty good argument in favor of well-protected hives in our climate.

By the way, this will be a good season to test out the paper-covered hive, and if any are wintering their bees in that style a report will be appreciated.

As to the winter weather spoken of, I have an idea that there have been seasons with more stormy weather, and more really disagreeable days. But the cold since Jan. 5 has been *continual*, which accounts for the very low monthly average temperature.

Short Course in Bee-Keeping

On page 48 I mentioned the Short Course in Bee-Keeping as being in progress at Guelph College at the time I was writing. Needless to say the interest in the different sessions continued right through the whole two weeks, and no doubt much practical information was received by the large number of students in attendance. While I was attending another course, yet it was an impossibility to stay away from the bee-keepers all the time, and I generally managed to get around to them at least once a day.

In common with all the Short Courses in connection with the college, the bee-keeping course was intensely practical,

and experience has shown me that the "show me" attitude is by far the best method of imparting knowledge to beginners in any line of work. And just here I may say, that with the men like Clark, of Borodino, telling how to rear queens, there was a chance for others besides "beginners" to learn something. The same thing might be said in connection with the practical talks and demonstrations given by Mr. Sibald on the general management of apiaries, and of course the different lectures of Mr. Pettit, the Provincial Apiarist, were highly appreciated by all privileged to listen to him.

Aside from these strictly bee-keeping topics, etc., the students were treated to lectures from different members of the college staff, who took up various phases of work indirectly connected with the bee-keeping industry. Altogether it was no doubt a very successful Short Course viewed from every standpoint, as I found all the students enthusiastic, the Provincial Apiarist likewise, and President Creelman made no secret of the fact that he was pleased with the large attendance. These various factors augur well for the future status of bee-keeping at the college, and any unselfish person can not but be pleased with the progress being made in our industry.

Improving the Honey-Bee

As to the improving of the honey-bee, written about so entertainingly on page 50, by Mr. A. C. Miller, I must confess that my short visit of 4 weeks at the Guelph College this winter has made me quite skeptical as to the chances of making any very rapid, permanent changes in the characteristics of the bees. It is said that a "little knowledge is a dangerous thing,"

and while I didn't get even enough for that, yet I confess that the brief glimpses into Mendelism and other laws of breeding have served to make me believe that the breeder of bees has a tremendous task when he sets out to make any decided changes in his stock in the course of a very few short years.

It may be argued that breeders of live stock, such as cattle, horses, sheep, poultry, etc., have made great strides, but please remember that they do not have to reckon with parthenogenesis, and the impossibility of controlling the male side of the breeding stock. Even without these difficulties, it is surprising to learn how often breeders meet with disappointment; and while in their case a mutant or sport is comparatively easy to keep true to type, with bees we can not claim that advantage, owing to the difficulty of controlling the drone problem.

Just at present I am strictly in the "don't know class," in the matter of claims made by different men, and while in that condition I trust I may be excused for being so skeptical—anyway, honest doubt is better than being too sure, and then find out after all that we have been mistaken.

Just a parting word on this question: The very little I have been able to glean on the subject under discussion, convinces me that the claims made as to taking bees and in a few years producing offspring from them with *longer tongues* than the average, is a "joke." At the same time let us welcome the honest investigator, and if any one can succeed in changing any of the characteristics of the honey-bee to the betterment of the race, all honor to him even if such changes are made along lines directly antagonistic to Mendel or any other so-called authority.

FAR WESTERN BEE-KEEPING



Conducted by WESLEY FOSTER, Boulder, Colo.

Delta County (Colo.) Bee-Keeping

Delta county is a typical county of the Western Slope in Colorado—desert of a most pronounced type—sage-brush, shad scale and chico growing on the yellow, almost-bare clay-soil. Scarcely any grass grows except what is irrigated, and the prairies and mesas are green only in the spring. But such soil!—just irrigate, and the way things do grow—the roadsides where irrigating water can get at the roots of the plants will shoot up weeds to a prodigious height, and the weeds do grow so high that teams on the roads are hidden by them. To the north, rising from bare yellow mesas towards Grand Mesa, mountain high and covered with timber with beautiful lakes, I am told, on its flat summit. From the summit of this mesa the city of Delta gets its water-supply, which is better than the water of many Western Slope towns. It is piped something like 20 miles.

Grand Mesa is the largest and highest in Colorado, and rises to about 10,000 feet elevation, or about a mile above the little city of Delta.

To the southeast rise the steep-sided mesas, yellow and bare as the mesas that hover under the shelter of the Grand Mesa. These mesas to the southeast rise quite high, and as you go farther back become real mountains, and through them is channeled the wonderful Black Canyon of the Gunnison, the sides of which rise several thousand feet, and so narrow that the chasm is impassable for a good part of its length. From this canyon the Gunnison tunnel cuts through under these mountains and mesas for 6 miles, and spills the waters of Colorado's largest stream into the Uncompahgre Valley, several miles above Montrose, and about 30 miles above and south of Delta.

When the waters of the Gunnison are fully conserved they will irrigate

American Bee Journal

hundreds of thousands of acres of new land. So far, the curse of the Western Slope has been too much water, thousands of acres have gone to seep, caused quite probably by the use of too much water.

The sides of some of these mesas are rocky cliffs, and wonderful stories are told of the tons of wild honey to be secured by the use of ropes and tackle, and several sticks of dynamite! I believe it was a dreamy old bee-keeper told me a story of an old trapper who caught a grizzly bear sniffing around the edge of one of these cliffs. The trapper came over the next day with ropes and pails to get the honey he thought was near by. Leaning over the cliff and looking down he saw, about 50 feet from the top, and perhaps 150 from the bottom, thousands (?) of bees flying in and out of the rocky side of the cliff. Tying the rope securely around his body under his arms, he passed the rope around a smooth-surfaced cedar-tree so that the rope would slip easily. He began letting himself down over the edge. The rope was smooth, and so was the cedar, and his arms were strong. He could raise himself by giving the rope in his hands a strong pull. He soon had let himself down to where the bees were going in and out, and tying the rope in his hands, through the one around his waist was securely suspended close to the bees' entrance.

The rock was shale, and by kicking with his feet and pulling rocks out with his hands, he soon had uncovered the bees' store-house and cave. He had his pipe as his only smoker, and his jack-knife for a tool. But he soon had his pail full. He would pull himself up—empty his pail and come back for more honey. Fastening the pail through his belt he gave several strong pulls on the rope. He did not rise so easily as before—his bucket was full of honey! He, however, raised himself about half way when the rope slipped off the root it had been rubbing over at the crest of the cliff, and came right across the edge of a sharp protruding rock. He was swinging back and forth in mid-air—afraid to pull longer for fear he would cut the rope. At the first swing he heard a sharp cutting sound, at the second, upon looking up he saw strand one severed; swing three, and the next one gave away; swing four, and our hunter's vision became dimmed, and that's the last our friend remembered that day.

The side of this hill sloped away from perpendicular toward the bottom, and from the marks visible the next day, it appears the first impression made on the clay was some 25 feet below the bees' cave. Jimme Goodrow was up at his headgate the next morning, and hearing a busy hum among the chico, found our hunter badly battered up and vainly trying to keep the bees away from his honey-bedaubed anatomy. "Been huntin' bees again, eh!" growled Jimme. Jimme looked up at the cliff and remarked, "Well, if it hadn't been for the seep-water softnin' the clay on that 'er hillside you'd 'a been in kingdom come. Any bones broken? Well, you jest stay here and be as comfortable as you can until I get the wheelbarrow; I never could get a wagon through this chico-brush."

What do you think of that for a Delta bee-man to tell a tenderfoot?

Wild bees are plentiful in the cedars and in the rocks, and that is one reason that foul brood is so hard to combat in Delta county. Mr. Ensley, at Read, took quite a few colonies out of the trees and rocks when he was first getting a start in bees. During August, the first time I was there for any time, the sun beat down with a blistering glare, and off to the south the peaks of the Uncompahgre Mountains rise into the blue with an Alpine sheer ruggedness that suggests coolness, but brings none to the body. Following around the base of the mesa we wind back and forth until we come out on top, and here are fruit-farms of from 10 to 100 acres, with much general farming also being done. Onions, potatoes, alfalfa and grain are extensively grown. The second growth of alfalfa was yielding some honey, but the turnips were cutting down the yield a great deal, for I found hundreds of them in nearly every bloom that I examined.

Delta county has several hundred bee-keepers, and most of them own land and are prosperous. Some are homesteading and making a living from bees while doing it. There are probably 15,000 colonies of bees in the county, and if foul brood were better under control the county would doubtless support twice as many. I was told that 12 cars of honey were shipped in 1910, but that not more than half as

much would be shipped in 1911. I think both of these estimates rather large for full carload shipments.

The honey produced is about half and half comb and extracted. The bee-men get from 6 to 7 cents a pound for extracted, and 10 to 11 for comb honey. The bee-keepers here sell early, and I believe were sold out the past season before almost any other section of Colorado. Alfalfa yields honey from all three growths, and if the weather remains warm the bees will store honey until the last of September. The whitest honey is gathered in June and July, but last season the best honey was light amber. Sweet clover grows everywhere, and cleome is abundant, but I am told that cleome does not yield any honey to speak of.

Bee-keeping methods, as a whole, are behind those in northern Colorado, but there are several progressive bee-men in the county, and things are improving. Box-hives still abound, and many make no pretensions to opening their colonies from one year to the next. These bee-keepers are fast being wiped out by foul brood.

One of the greatest troubles in marketing honey in Delta county is the lack of uniformity in grading and packing comb honey. The bee-keepers are getting together, and this year will see quite a number of comb-honey producers using uniform shipping-cases, and grading according to the Colorado Association rules.

BEE-KEEPING IN DIXIE~



Conducted by J. J. WILDER, Cordele, Ga.

Getting Started With Bees

MR. WILDER:—Our family are all very fond of honey, and as we have a suitable place for bees, I would like to start with one colony, and as I learn their culture I would like to increase until I have enough bees to produce honey for home use.

I do not know a thing about bees. What would you advise for a starter?
Charleston, S. C. WM. H. BURCH.

I would advise you to read as much literature on bee-culture as possible. By way of an outfit get a bee-smoker, a pair of gloves made to handle bees, a bee-veil, and a colony of Italian or Caucasian bees in an 8-frame observation hive, 1½-story.

This is the surest outfit to get beginners deeply interested in bee-culture, for the bees can be seen inside the glass hive at work, which will arouse great interest and study, and cause great inspiration; and at the same time the frames containing the comb can be lifted out and the bees in this way investigated.

Honey Prospects for 1912

So far prospects perhaps were never so bright for a good yield of nectar throughout Dixie. The abundance of rain will cause the honey-plants to bloom well and normal, which has been the case for the last two seasons, and

which partly accounts for the short honey crops, especially along the coast where the main honey-plants are small shrubs, bushes, weeds, or vines; which is also the case out in the interior of the country in many locations. These small plants can not withstand the drouth and forest fires which follow as the larger honey-plants can, and this greatly cuts off the flow of nectar.

Owing to the extremely dry summer and fall there are many bees in poor condition, because the supply of nectar and pollen was greatly cut off, and the bees could not build up and go into winter in good condition.

Owing to the very bright prospects that are before us for the approaching season, bee-keepers should put forth great efforts to get their bees in the best possible shape for the honey crop.

Becoming an Extensive Bee-Keeper

MR. WILDER:—I want to be an extensive bee-keeper. I have some knowledge of the business, but not enough to go into it extensively. How long should I work with some progressive bee-keeper before I could obtain the necessary instructions?

Lawenceville, Ga. J. ALLEN SMITH.

This is a rather hard question to answer, for two reasons: First, so much depends upon your ability to learn bee-keeping in all its branches, and prop-

American Bee Journal

erly apply the knowledge obtained with the necessary energy.

Second, much depends upon how you expect to go into the business. If you expect to start with a small business and build it up to a large one, perhaps one season's work with a good bee-keeper would be sufficient. But if you expect to buy out an already established extensive bee-business, you would better work at least two seasons, and more would be better, for it requires a lot more practical knowledge to take hold of and carry on an extensive business than a small one.

I don't think it would be advisable to use the combs of honey as you suggest, unless the swarms were very small, or you could use them in this way for your last swarms at the close of the honey-flow, for such swarms would most likely need them. But large, early swarms would not need them for best results.

At the beginning of the honey-flow, and during the greater part of its duration, all frames of honey mostly sealed should be kept extracted, and the empty combs inserted in the middle of the brood-nest. This would mean wholesale bee-production at the proper time, and a great honey harvest.

Back to "Dear Old Georgia"

I stated in the "Dixie" department in the December issue that wife and I left Georgia on Nov. 15 for Florida, where we expected to winter, or give the bulk of the cold weather the dodge, which we have done, and now (Feb. 15) we are getting ready to return to Georgia to begin our busy season, and indeed we feel greatly benefited by the trip in every respect. It has been the pleasantest winter of our lives—no frost, ice or cold, chilly wind to cause our frail bodies to shake and quiver, for most of the time it has been pleasant and balmy. I feel greatly recuperated after last season's hard toil, and I can enter the approaching toilsome season with greater vim and inspiration than I ever have before, and I hope and expect to press harder for the goal than ever.

But, aside from this, what did we accomplish by the trip? Well, I had my cottage ready built in my mind before I arrived, and a bill of material ready made out for it, and by the time I got it on the ground, "Jack"—the foreman of our bee-business in this State (Florida) was here ready to help. He had never done any carpenter work, and it had been some years since I had done much at the trade, but soon the old "tricks of the trade" came afresh in my mind, and it seemed that my talent for the trade was greater than ever before; and, my! how we made the saws and hammers ring, and in 32 days from the time we started we were finishing up the 6-room cottage, which has a hall through it, and the rooms are not small, either. It is well finished up, too, and it is no bull of a house or a shack. The cut shows the front and rear views of the cottage which appear so beautiful, sitting out on a ridge, nestled among the orange, tangerine, and grape-fruit trees, the delicious fruit of which we have so sumptuously

feasted on during our stay here, and under the cool shade of which we have sat so many times and enjoyed the steady, balmy south breeze, and planned out the most of the work of our busy season which is fast approaching.

Since we have been bee-keeping we have made a number of investments in real estate with the net returns of our blessed little bees, but none do we appreciate like this one; and it will be a source of great inspiration to me during the busy hours of the coming season. Oh! what a joy it will be to me to wind up the season's work and re-



THE WILDER WINTER HOME IN FLORIDA.

turn to this beautiful country where the climate is so pleasant, and we are so well fixed to live and enjoy ourselves.

We have not been here alone, either, for quite a number of bee-keepers from the Northern States are here "wintering," and the little bee has been the subject of many long and interesting conversations, a summary of which I will give at another time, for some very important points were brought out relative to our industry.

Fellow bee-keepers, make your arrangements to meet us here late next fall and spend the winter months, and

we will give you a good time in the pleasant, sunny "Land of Flowers."

Wintering and Other Qualities of Caucasian Bees

MR. WILDER:—I am writing you at this time for I read your articles in the American Bee Journal, and I saw that you had never had a report as to the wintering qualities of the Caucasians here in the North. I have had the Caucasians for a number of years, and am well pleased with them, even if there are still some faults to find with them. But when I sum up their bad qualities, and then try to balance them with the good ones, I find them away ahead of the other races, and I have tried about all there are to try, even paying D. A. Jones \$15, away back in the early '80's, for a pure Holy Land queen, and had to kill her the second year in order to save myself and family from death by stinging (?), for they were not to be quelled except with chloroform.

As to wintering of the Caucasians, I will say they are the most hardy bee in existence today. They will stand almost any kind of usage, and I can winter in my cellar almost a mere handful, when the other races will worry and desert their hives. Here in the North there are some who winter bees out-doors, but I at times think it is almost an impossibility to do it.

I honestly think I can get a third more honey in my location with the Caucasians than I can with the Italian. I have both, and run about even as to number of colonies. I breed my Caucasian queens at the main yard, and fertilize them in an isolated place. I have only the gray variety; I have had the yellow, but I think them inferior to the gray. I import all my breeders from the Caucasus district, and I have had some from away down east bordering on the Caspian Sea, but they were all mixed up, both yellow and gray.

As you say, they are good propolizers, but if the entrance is made dark, and not too large, that will lessen their propensity for daubing up things with their dark-brown glue, which resembles them in color.

Ingham Co., Mich. A. D. D. WOOD.

Glad to hear from you, Mr. Wood, relative to the qualities of the Caucasian bees in the North. So far nothing but good reports have come in of the past season, from either North or the South, as to the qualities of this variety of bees. They have proven to be at least one-third better than any other bees I have been able to obtain.

CONVENTION PROCEEDINGS

Eastern New York Convention

The Eastern New York Bee-Keepers' Association held its 4th annual convention Dec. 21, 1911, at Albany, N. Y. Owing to unfavorable circumstances only a short notice could be given, and consequently there were only about 30 bee-keepers present.

The proceedings consisted mostly of routine business, and the consideration of technical questions pertaining to bee-keeping.

The members reported the past season as the poorest in many years. The production of honey was less than half of an average crop; but with the optimism characteristic of bee-keepers, they all hold bright hopes for the future.

The Secretary's report showed a list

of 103 members since the organization of the Association, 4 years ago. The Treasurer's report presented a healthy condition of the treasury with a neat balance on hand.

Pres. Wright, in his address, reviewed the condition of the industry, referring to the very unfavorable season and the shortage of the honey crop, and noting that a material advance in prices had resulted, which it was hoped might be maintained in the future.

He called attention to the action of the National Bee-Keepers' Association in reorganizing that body and adopting a new constitution for the working of the Association on a new and entirely different plan. Much consideration was given to the subject, and many expressions of disapproval were offered. It was decided unanimously

American Bee Journal

to take a vote by mail of all the members, on the question, "Shall we renew our membership in the National Association under the provisions of the new constitution?"

The annual election resulted in the re-election of the entire board of officers, as follows: President, W. D. Wright, of Altamont; 1st Vice-President, A. Johnson, of Schoharie; 2d Vice-President, C. W. Hays, of Brookview; Secretary, S. Davenport, of Indian Fields; and Treasurer, M. A. Kingman, of East Greenbush. This makes the fifth term Mr. Wright is entering upon as president, he having served in that office since the organization of the Association.

A communication from the Hon. R. A. Pearson, State Commissioner of Agriculture, was read, requesting the appointment of a delegate to represent the Association at the annual meeting of the New York State Agricultural Society. S. Davenport was elected as such delegate.

A communication to the State College of Agriculture had been directed to be made, requesting that experiments be conducted along the line of reducing the length of the corolla of the red clover blossom, so as to enable the honey-bee to obtain its nectar. C. B. Loomis presented a communication on the subject from Prof. H. W. Webber, of the State Agricultural College.

C. B. Loomis also presented for examination and consideration a sample copy of a writing pad for the use of school children, having appropriate illustrations of the honey-bee, queen and drone, and a descriptive article on the honey-bee and the desirability of honey as a food. This pad is issued by the New York State Association of Bee-Keepers' Societies, with the object of advertising honey and increasing its sale.

A proposition to establish a honey exchange at Albany for the purpose of disposing of the honey crop of members of the Association was largely discussed. A committee of six—Pres. W. D. Wright (ex-officio), C. B. Loomis, I. V. Lobdell, D. L. Woodward, F. R. Stevens, and Alden Hilton, were appointed to investigate and consider the matter, and report at the semi-annual convention.

The question-box was opened, and eight questions were considered and answered.

This gathering of bee-keepers proved to be one of the most interesting, enthusiastic and satisfactory ever held by the Association. S. DAVENPORT, Sec.

The Oklahoma Convention

There were present the smallest number of bee-keepers that have ever attended a meeting of the Oklahoma Bee-Keepers' Association, held at Stillwater, Okla., Jan. 18, 1912.

Nearly every number of the program was filled, either by the party present or sending in his paper.

F. W. Van DeMark was constantly in attendance with a large fund of information gained by years of experience in Oklahoma, and extended many courtesies to the visiting bee-men.

Prof. Sanborn was able to attend more of the sessions than usual, and manifested a lively interest, and freely offered his opinion on many points of interest, but unfortunately for those in attendance, was shoved off the general program by the necessity of its re-arrangement to accommodate out-of-town speakers on other subjects who had to be given the time that best suited their convenience.

It was voted not to become a branch of the National Bee-Keepers' Association at present, and the membership fee was reduced to 50 cents.

The following resolutions were adopted:

Be it resolved, by the Oklahoma Bee-Keepers' Association, that the A. & M. College and Experiment Station be requested to carry on more experiments along apicultural lines, to determine the best race of bees, the most useful hive for the farmer bee-keeper, the best manner of feeding the bees, and also to experiment with different honey-plants.

We also request that an apiary be established at the College, and some help by lectures and exhibits on some of the future demonstration trains be given.

Be it further resolved that we tender a unanimous vote of thanks and appreciation for the courtesy extended us in announcing our program in the College literature, and furnishing us with a comfortable room in which to conduct our meeting.

The next meeting will be held at the State Fair Grounds, Oklahoma City, Okla., during the period of Sept. 23 to Oct. 5.

The following is the list of officers: N. Fred Gardiner, President, Geary, Okla.; Geo. H. Coulson, Vice-Presi-

dent, Cherokee; G. C. Boardman, Secretary, Shawnee; and G. E. Lemon, Treasurer, Nash.

The Indiana Convention

The Indiana State Bee-Keepers' Association held its annual meeting at Indianapolis, Ind., Feb. 22, 1912, which was fairly well attended.

The meeting was called to order by the secretary, Geo. W. Williams, of Redkey, Ind. In the absence of the president and vice-president, Mr. Mason Niblack, of Vincennes, presided.

An address was delivered by Dr. E. F. Phillips, of Washington, D. C., on American and European foul brood, illustrated by stereopticon views. It was very interesting and instructive, and was discussed at length.

Mr. E. R. Root, of Medina, Ohio, gave a good talk on some very important questions. The wintering of bees was fully discussed and some very important points brought out.

The question-box contained questions which were of interest to all.

The following officers were elected for the ensuing year: President, Mason J. Niblack, of Vincennes; vice-president, C. H. Baldwin, of Indianapolis; secretary, Geo. W. Williams, of Redkey; and treasurer, E. A. Dittrich, of Indianapolis.

Messrs. E. A. Dittrich, J. W. Sw and John C. Bull were elected delegates to the National convention of 1913.

SOUTHERN BEEDOM~



Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

The National Bee-Keepers' Association

It is a great pleasure to see that there is "something doing," and more to be done, by the way the National Bee-Keepers' Association is organized now with its new Constitution. Heretofore the National Association did not really amount to a very great deal to its membership, aside from a few benefits that were derived by belonging to the Association, and the aid lent it in securing things that can only be gotten by united effort. Since the reorganization of the Association, which it practically is, there has sprung up a good deal of new life and interest, and that there will be some results need not be doubted in the least. Since the members of the main part or the head of the National Bee-Keepers' Association are active or "real live wires," there is no question but that the various branch organizations will co-operate promptly in carrying out in a co-operative way any important things that may come up before the Association.

The writer has always been interested in anything that had some "real life in it, or that was possessed of some get-up and go qualities that keep things moving and accomplish something," and the way the work of the National

Bee-Keepers' Association is starting out is a pleasure indeed, and it is only hoped that this interest in the Association will continue, and that much good may be accomplished throughout the year and the time to come.

Of much interest is the matter in Article 8—organization of branch associations of the National Bee-Keepers' Association. It is hoped that bee-keepers who are so situated that a local branch may be organized will avail themselves of the opportunity, and thereby assist in one great co-operation of united effort and accomplishment. It is sincerely hoped that our grand Lone Star State of Texas will have one of the largest of these, or a number of such local branches, since the bee-keepers in Texas are numerous enough to organize many such with the required number of not less than 25 members.

The writer has always been deeply interested in the organization of bee-keepers, the getting together of those who are interested in one and the same cause or vocation, and working in unity and co-operation for all that is good and of interest to their calling. It is hoped, therefore, that the bee-keepers of Texas may awaken to opportunities that are here for them at this time;

American Bee Journal

that they may get together and work more in unity and harmony toward accomplishing great good and furthering the cause of the bee-keeping industry of our great Lone Star State. Let us resolve now that we will not stand back, but be with those in the lead toward achieving much in a united effort for a better and a more profitable bee-keeping.

Value of Letters from Bee-Keepers

Since our request in the January issue for "newsy letters" from the readers of Southern Beedom, we have had the pleasure of quite a number of responses which are not only an encouragement to us in our department work, but in some letters points are brought out that are of more or less interest. We shall be glad to hear from our readers throughout the year, and although we will not be able to publish letters in full, we shall use such parts of them as may be of interest to our readers.

One of our old-time contributors, Mr. L. B. Smith, has always had a good word to say for the "old reliable" American Bee Journal and its various departments. For this reason mainly we are publishing parts of his letter, and another reason is because it shows as nearly as possible the kind of season that existed in Texas last year, which resulted in practically only half a crop of honey harvested in our big State as a whole; but in spite of this, the total output of the Lone Star State was an enormous one:

EDITOR SCHOLL:—Seeing your request in the American Bee Journal of January for us all to write you of our success or failure with the bees the past season, I take the liberty of writing you. I am compelled to confess I have had more of the latter experience the past season than of the former, but you say both are acceptable.

Starting in the spring of 1911 with a little less than 300 colonies of bees about 50 were kept at home, the rest in out-yards from 4 to 12 miles away. The winter of 1910 and 1911 was warm and dry over most of the State, and the bees generally wintered quite well and were strong in numbers early and well supplied with stores. This alone would almost insure a prosperous year with the bees. The season, however, seemed "all out of joint," so to speak, from start to finish. We had some real summer weather in mid-winter, which brought out many of the pollen-bearing and early honey-yielding plants at an unseasonable date, followed by a late, cold spring.

The bees, however, seemed so determined and prosperous that nothing seemed to check them, and they were swarming at an early date. So much so that I lost a few swarms in the out-yards before I suspected it. I never saw swarms as persistent in absconding in my 30 years as an apiarist. They would leave brood, honey, or anything that seemed fit to give them and "hike out" to the woods. This was a general complaint of all classes of bee-keepers, and one of them told me he hived one 4 times and then they "skipped" for parts unknown. I don't know the reason for this unless it was the scarcity of new honey at the time of swarming.

At about the time the first swarms commenced to issue, the long-looked-for rains set in, and it rained almost continually till May 2d. Then it stopped off short, the weather changed from cool to extremely hot and continued throughout the summer. The abundant rains caused vegetation of all kinds to take on a growth we seldom see after such a dry winter as we had had, with the result that the whole face of the earth was a perfect flower-garden by May 10th. The flowers seemed well laden with the precious sweets that gladden the heart of the apiarist, and the bees practically gave up swarming and settled down to business at honey-gathering in a way that caused us to feel almost assured of a honey crop. But,

alas! we realized only too soon that a long summer drought had set in at least a month too early, and continued throughout the year 1911. By June 10th the beautiful flowers that had gladdened our hearts but a few weeks before were now a brown, withering mass, under the scorching rays of a semi-tropical sun, with the result that I secured only a little over 2000 pounds of extracted honey, and a few hundred pounds of comb honey, and had some feeding to do in the fall.

L. B. SMITH.
Rescue, Tex.

Realizing how the tale of one's experience during a successful year will encourage other bee-keepers, especially our younger ones of the craft, and how mistakes and failures perhaps may be avoided by reading letters telling of these, is a reason why we expect to publish once in a while such letters. We know from our own experience that reading them will help certain ones in one way or another in their chosen work, and is often a cause of their being successful in their undertakings. For this reason we are reproducing parts of one of our subscriber's letters here:

DEAR SIR:—In the January issue of the American Bee Journal you request your bee-keeping friends to send you "newsy letters" about themselves or about their successes or failures. I have read all that you have written, for I am a reader of all the bee-papers published in the United States and Canada, and your articles have always been highly appreciated by me.

Twenty-three years of age now, I was born of German parents and reared on the farm where my father kept bees in box-hives to furnish honey for our own use. During the swarming season father just hived the largest swarms and let the rest go to the woods.

At the age of 12 years I contracted the bee-fever and hived every swarm, whether large or small, and have since increased my num-

ber of colonies to 240. Enough hives are ready to increase to 500 colonies this spring. I am also working 200 colonies on half share. It is my intention to go into the bee-business extensively, so I will work more for increase than for a large crop of surplus honey.

I make my increase by the "shook swarm" method. For the last few seasons I prevented swarming as much as possible, but sometimes I meet such a stubborn colony that insists upon swarming. Last season I had a few of these.

I have a way of my own to hive virgin queens or any unclipped queens. It is simple and practical. Simply get a gallon can and put your empty hive to receive the swarm within 10 feet of the cluster. Then scoop about half a gallon of bees of the cluster and throw them at the entrance of their intended home. It won't take long for these bees to sound the note that a home is found. Then with the smoker give the clustering bees a good smoking till every bee is in the air. The flying bees will hear the hum of their sisters and at once conclude to join them, and the hiving is done.

The past season has not been very favorable for the production of honey. There was too much rain in the spring and not enough later on; however, I averaged 71 pounds of bulk comb honey per colony.

I have 50 divisible brood-chamber hives in use at present, and am so pleased with them that from now on all of my increase will be in those hives. It is wonderful how many advantages that hive has.

In one of the bee-papers I read that you were going to rear your own queens, and afterward heard that you discontinued the rearing of queen-bees on account of other bees being moved close to your queen-rearing yard. I am of the strong opinion that this is one of the most profitable branches you can start to your advantage, for queens sent by mail are never the equal of the home bred. I started to rear my own queens 5 years ago, and am still doing so, and will continue it as long as I continue to keep bees. I have made it a rule to requeen all colonies every fall that did not come up to the average, and am very well pleased with the results, for my bees are considerably better than they were 5 years ago.

Elmendorf, Tex. ALFRED L. HARTL.

CONTRIBUTED ARTICLES~

Some Helpful Hints on Foul Brood Treatment

BY G. C. GREINER.

For a number of years the foul-brood question has been one of the main subjects in all our bee-papers. It has been discussed from all sides; signs and symptoms, treatment and cures, have been given by the different bee-experts, so that a detailed report of my late season's experience would seem like a useless repetition of what has been said before. Besides, we have Farmers' Bulletin No. 442, issued May 6, 1911, by the United States Department of Agriculture, that, I believe, anybody can have for the asking, which gives nearly everything connected with the disease and its treatment better and more complete than I could think of offering. Still, no two persons have exactly the same experience in any line, and by mentioning a few points that are not spoken of by any one else, I may help some unfortunate brother who has the same task before him that fell to my lot last summer.

We will take it for granted that foul brood has taken possession of an apiary to such an extent that shaking off

the bees and the introduction of Italian queens is the only way to save anything from the wreck. The treatment requires, as all our experts advise, and I know from experience that this is correct, that all colonies should be made as strong as possible to prepare them for the ordeal. It does not pay to waste time with weak colonies, for the probabilities are that they will prove a failure during the season. As diseased colonies are very apt to be on the weak order, and as we have no sound, hatching brood under the circumstances to help these weaklings, the only way out is to double up or triple up, if necessary. To do this in systematic manner, the whole apiary should be arranged in twos or threes, as the case may be, before the operation of shaking off is ever attempted.

To prevent mixing up as much as possible when treated, it is an advantage to have these couples or triplets as far apart as they can conveniently be arranged. There is plenty of time between fruit-tree bloom and the opening of the first honey-flow to shift them about, for the shaking off should not be undertaken until a fairly good honey-flow is under way. Bees can then be handled without any danger of robber-bees transmitting the disease to

American Bee Journal

healthy colonies that may be in the yard or near-by.

Another part of the treatment—the one that generally causes the less experienced bee-keeper a great deal of

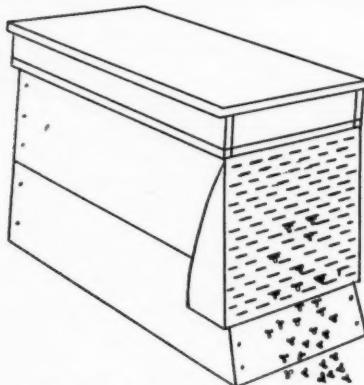


FIG. 1.—GREINER'S QUEEN-SIEVE.

anxiety—is catching the old queens. To be prepared for the shaking, it is very convenient to have them all caught and caged before hand. As they are supposed to be blacks (as the great majority of mine happened to be), they are not easily found, in many instances baffling the skill of the most experienced expert. For this reason it is well enough to begin hunting for them a week or 10 days ahead of the time they are wanted. If a queen is not found at one time, by examining the hive the next day she may come in sight on one of the first combs taken out. In this way I caged the queens of nearly all my diseased colonies (some 44 or 46) before the white clover flow began. Only in two or three cases I failed to find "the ladies" in spite of my repeated search, and research, and I was finally compelled to resort to the excluder at the time of the treatment.

The principle of the device illustrated at Fig. 1, is not a new idea. To find a queen by means of the excluder has been repeatedly mentioned in our bee-papers, but, as far as I know, no detailed description of its application has been given. It is a simple affair; still, when we are compelled to resort to our own resources it is sometimes a great help to have some one else's experience to fall back on. Bees are very apt to clog up the excluder, and are thereby a great hindrance when trying to find the queen. To overcome this trouble, in a measure, the excluder should be as large as possible, and at the same time slant forward at the bottom. This seems to give the bees better chance to pass through the perforations than an excluder in perpendicular

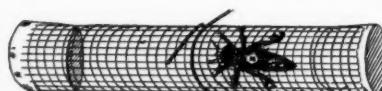


FIG. 2.—WIRE-CAGE WITH QUEEN ENCLOSED

position. The one I use (see drawing) reaches from the cleat at the top to about midway of the stand alighting-board. Then it should fit any hive and be adjustable and removable instantly. The two wings, to which the exclud-

ing zinc is nailed, are simply a couple of pieces of $\frac{1}{2}$ -inch board that slip on each side of the hive and stand, and with a small wire-nail, partly driven in, in each, the whole rig is securely held in position. As a last resort to find a queen, I can recommend this device as almost infallible to any one in trouble along this line.

Another point which I found by experience to be of great importance, is this: A colony should not be shaken off and made queenless at the same time. In their consternation and excitement, trying to find their mother, the majority of them will take wing and enter any hive where bees are in sight except the one we intend they should. If the colony under treatment is not entirely ruined by this desertion, it is so reduced that it is likely to prove next to a failure during the season. In case the queen has been previously caged, she should be suspended for a few days among the frames of the newly prepared hive the colony is to occupy (see illustration, Fig. 3), and if the new Italian queens are on hand, as they should be, they, too, may be introduced in the suspended cages at the same time. But if the queen has to be caught at the shaking off, she should be placed in the new hive as soon as found, and the excluder removed instantly.

The cage I use (shown at Fig. 2) has a number of advantages over the com-

ing machines. Although I believe in the usefulness of solar wax-extractors, most practical bee-keepers who have tried them recognize that they are not by any means to be used in all circumstances.

The first mention I ever saw of this method of rendering beeswax by solar rays was in the '70's, in L'Apicoltore, the Italian bee-paper. Italy is under the same latitude as our Middle States. The sun has a great deal of power in that country, and shines most of the time. No one thinks of Italy without the prefix "sunny." At the first description of the solar wax-extractor, we had no rest until we had made one. A little later, in this country, O. O. Poppleton made the invention of a similar machine without having ever heard of them.

The solar extractor proved very beneficial in rendering the odds and ends of the apiary. We are in the habit of gathering the dregs of brace-combs and bridges which the bees usually build between their combs and over the top of them. These we roll into a ball which is put away until some suitable time. With a wax-extractor these small lots may be rendered as fast as they are gathered. This saves them from possible loss or destruction by the moth, if they were left exposed. With an apiary of 50 to 100 colonies I believe that the careful apiarist will save enough to pay for the cost of his solar extractor in one or two seasons.

But when we tried the solar extractor for old combs we were very much disappointed in ascertaining that the cocoons and residue absorbed nearly all the wax which they contained.

Many apiarists assert that there is no wax worthy of mention, in the old, black combs. The trouble lies with their method of rendering them. If dry, black combs are heated with little or no water, the dry cocoons and residue become soaked with wax and give it up afterwards with difficulty. Our water-melting process has always been to crush those old combs during the cold weather, at the time when they are most brittle, and afterwards soak them thoroughly in soft water, either by putting them in a sack or under a cover and loading them with stones to sink them in the water. If the reader tries this, he will find that in a very few days the water has become yellow or muddy from the dissolving of a great deal of the slumgum. But the wax does not dissolve or rot, even if it were left under long enough to have acquired an unpleasant smell. The effect of this soaking is to prevent the absorption of wax, since the thoroughly wetted residues can no longer absorb the wax. The breaking or crushing of the combs previously, helps this soaking, and prevents the wax, when it is melted, from lodging into the cell-shaped cocoons, from which it would afterwards be removed with difficulty. With the use of the solar extractor, it is out of the question thus to soak the residues, for the first effect of this soaking would be to create a great deal of steam by evaporation of the water, as soon as we placed our soaked combs into the extractor; neither would the wax melt until those combs were again dry.

It may therefore readily be compre-

The Solar Wax-Extractor

BY C. P. DADANT.

A beginner in bee-culture has recently asked me about the advisability of investing in a solar wax-extractor to the exclusion of other wax-render-

American Bee Journal

hended that it is entirely out of the question to melt old black combs with the solar extractor and expect any adequate returns, while the use of water in some sort of boiler will permit the separation of nearly all the wax from the slumgum of the ugliest combs.

When it comes to the rendering of cappings, it is evident that the solar may be used without loss. However, unless we have a very small quantity, we will find that we get a brighter lot, though not so white, but cleaner, by using the same water-melting process. Whatever residue present usually separates very easily from the wax in soft water, the wax rising to the top, and the residue almost without exception going to the bottom.

The solar extractor has one advantage, however—it will make the wax lighter in color—more nearly white—for the rays of the sun have a tendency to bleach it. But if there is the least trace of untinned iron in our solar extractor, its presence will reveal itself by the existence of a black, rusty streak wherever the wax touched it.

One of the greatest disadvantages of the solar extractor is that the combs may be rendered by it at a temperature very much below the boiling point of water. I call this a disadvantage, because if by accident one is rendering combs of a colony which has died of some contagious disease, such as foul brood, there is great danger of transmitting the disease to the bees that may come to it. I have sometimes seen cakes of wax which had been rendered with solar heat fairly dripping with honey. Such cakes of wax need to be remelted with water and kept at the boiling point of water for a while, to make sure of destroying all possible germs.

Of course, the bee-keeper who renders his own combs generally knows whether there is disease among his bees or not, and he can take precautions. But if he has wax from others, or buys the combs of colonies that have died, it is very much better for him to take no chances, and melt all the wax by the water process.

When we melt up the cappings, it is generally after having allowed them to drain in the uncapping can for several days, and even weeks. But they are still sweet, and we always wash them in water, and this water, after having been tested as to its sweetness, is used to make mead and vinegar. The European apiarists, who are much more prone to save every item more carefully than we do here, sometimes uses the water in which wax has been melted, if it is at all sweet, for vinegar-making or for distilling. In this case, they first filter it or clarify it by some process. In large apiaries where hundreds of thousands of pounds of honey are harvested, the cappings and the water from them constitute quite an item.

We figure that for every 100 pounds of extracted honey, we produce about $1\frac{1}{2}$ pounds of capping wax, reckoned after it has been purified. So for 50,000 pounds of liquid honey, we would have about 750 pounds of net beeswax from the cappings. It would take a long time, or a large number of wax extrac-

tors, to render up this quantity. What is more important, the bulk of the extracting takes place at a time when the heat of the sun is no longer adequate—in late August, or September and October. With the water melting we can render them whenever we are ready.

Beeswax is so expensive and readily selling an article that it is worth while to use all possible means of saving every particle. That is why the solar extractor will always be a profitable implement in a bee-yard. It should be made of good material and shallow enough to allow the sun's rays to shine on every part of its inside early in the day. If some sort of cheap clock-work could be used to keep it facing the sun all day long, it would be much more active. But, in our latitude a few hours suffice for a small load of wax. Neither bee-moths nor flies can withstand the heat of the noon sun during the three hottest months—May, June and July—under the glass of the sun extractor, and the wax rendered by this process is at once made safe for cash returns.

Hamilton, Ill.

Sting-Proof People—Comments

BY E. G. HANNA.

On pages 7 and 48, the discussion of "Sting-Proof People" is somewhat interesting. Whether some people are absolutely "sting-proof" I know not, but I am well aware that the bees actually make a difference in people.

A good many years ago, when I lived in the Southland, I had a yard with about 25 colonies of bees in it, distributed all over the yard under native trees. Our well was in this yard, and a path ran through it, both to the garden and the public road. One afternoon, about 5 of the family were seated about the middle of the yard peeling peaches, and the bees were flying everywhere, and we sat there for hours and not one of the family got a sting; but during the time three negroes came in the yard, one at a time, and sat down with us, and each of the three was stung before being able to get away. Can some scribe account for this unless bees make a difference?

SELF-SPACING FRAMES.

On page 54, an enquirer wants to know if metal-spaced frames are better than staple-spaced frames, and Dr. Miller says he prefers galvanized shingle-nails to either. Now, if there is anything this scribe detests about an apiary it is a self-spacing frame of any kind. I used to cut out all my own frames with a buzz-saw, and I never made self-spacing frames. Then, I have bought a good many bees, and always with self-spacing frames, and they were always the hardest things on my temper of anything about the bee-yard.

If you have no propolis in your locality, and use a division-board in place of one frame, you get along; but otherwise, I have torn up many a frame in trying to get at the center of a hive. I like to have frames I can pry each way from the center of the hive, and can then slip out a frame with all ease.

REPRESSION OF SWARMING.

On page 39, Chas. Reynders, in quot-

ing from his German pamphlet, tells how to let bees rear their queen-cells, and of course you have to leave it to the bees as to how many they will start. My experience has been that as a rule they do not start as many as we want, and, besides, they are so light that we often spoil them in cutting out and handling. So this scribe long since quit letting the bees have their own way about it. I let them start the cells so as to get a supply of royal jelly, and then I make cells for them, and good, heavy ones, so I can break them off, or stick them on a frame at will, without any danger of spoiling them. Doolittle's "Scientific Queen-Rearing" will tell you how. I do not like the method here given.

LOSS OF BEES IN 10 YEARS.

A decrease of 800,000 colonies of bees in 10 years does not look very good for the bee-business of this country. The fact is that when foul brood becomes as prevalent as it now seems to be, the average farmer will prefer to quit keeping the bees rather than go to the trouble necessary to eradicate the disease. In fact, the majority of farmers do not care for their bees enough to make a success with a few colonies.

Poor Surplus Honey.

I got about 50 pounds of surplus honey here last year from 11 colonies of bees, and most of it was the blackest, nastiest mixture I ever took from a bee-hive. As bees did nothing, I got so busy farming I neglected them, and did not "fix" them for winter, so I expect to lose most or all of them on account of the severe winter.

SPRING FEEDING AND SPREADING BROOD.

By the time this is printed you would better see if your bees all have sufficient stores, and, if not, borrow a frame of honey from some hive which has a surplus, and exchange frames with the needy colony. You can help your bees to build up by spreading the brood, if you use good care and judgment not to spread faster than they can keep it warm. I have always gotten good results from spreading brood.

GOOD RESOLUTIONS.

"Making and Keeping Good Resolutions," on page 45, is worth re-reading. We ought always to remember that there can be no failure upon the Lord's part, but we may fail by failing to comply with our part of it.

Atwood, Ill., Feb. 14.

Handling Bees—How to Do It

BY G. M. DOOLITTLE.

From my multitudinous correspondence, and from what I have seen when visiting many different apiaries, I have come to the conclusion that there is a right and wrong way of opening a hive containing a colony of bees. The season when we must look after our bees will soon be here, and I thought perhaps I could do no better at this time than to give a few words on the subject of opening hives and handling bees.

Stings are sometimes dreaded by all, and if we are careless in our operations about the bees we are liable to be told



American Bee Journal

in a very "pointed way" of our carelessness. And even when we exercise due care, there are times when the opening of hives as rapidly as is necessary where the apiarist manipulates colonies by the hundreds, is somewhat beset with stings. Hence, it behooves us to start out right with each colony as we proceed in these operations. Many of these stings are brought upon us by the manner in which the hive is opened. There is more in this operation than very many of us even dream. Many of our text-books do not give the best instructions on this point, so that even the beginner, having such a text-book, does not learn how to open a hive properly, while with those who have no text-book it is simply a matter of guess-work.

Then, many of the instructions given in our bee-papers are largely at fault, inasmuch as they are given from the standpoint of an apiarist having only very gentle Italians. These may be all right for such bees, but when a beginner comes to apply them to the blacks, or still more vicious hybrids, he is obliged to beat a hasty retreat, or receive so many stings that he almost wishes he had "never enlisted for the war." And nine chances in ten the beginner commences operations with such bees by finding some runaway swarm, a colony in a tree, or some bees left him by some relative having a few colonies in box-hives.

It took me several years to learn in this matter of opening hives, and here is what I learned: To open the hive of the average colony of blacks or hybrids, have your smoker well filled with partially decayed wood, having placed a coal of fire in the bottom before filling, then work the bellows till a good flow of smoke comes from the nozzle, when you are ready to proceed to the hive you wish to open. Arriving, blow smoke two or three times across the entrance, so as to start the guards back into the hive, and if you have reason to believe the colony an easily excited one, or no nectar-secretion is abounding, follow this with one or two puffs in at the entrance.

Now, noiselessly, and with especial care about jarring, pry up the cover at one side, and as soon as a crack large enough to admit smoke is made, blow in a whiff or two, and as the cover is gradually lifted, blow more across the tops of the frames, so as to start the bees down between the frames of comb. Unless you have reason to think they need more than this, do not blow smoke down between the combs, for by so doing the colony, especially if blacks, will be stamped out at the entrance, and returning will boil up over the tops of the frames and sides of the hive, thus thwarting all prospects of finding the queen, should you wish to do so, as well as making all your manipulations very unpleasant.

If at any time the bees become restless and show a disposition to fly at you from the frames as you are handling them, more smoke will be required. By giving it at just the right point at this stage, the bees can be kept in quietude until you close the hive; but if delayed until quite a lot of bees get in the air and commence stinging the person or the clothes worn, nothing

short of sufficient smoking to subdue such a colony entirely will answer. Under such conditions I have had almost literally to drive the smoke down through each range of combs, till nearly the whole colony was out at the entrance, or over on the outside of the hive before I became master of the situation. However, when nothing unforeseen happens after opening the hive of the most vicious bees, occasionally a few puffs of smoke floated over the tops of the frames is sufficient to keep them in good subjection.

With gentle bees it is a very rare thing that I blow any smoke at the entrance except when a profuse flow of nectar has suddenly stopped. At such times, and with a cool, cloudy day, when all the old field-bees are at home, almost any colony will resent handling without considerable smoke, unless more time is taken to open the hive slowly and cautiously than is at the command of the apiarist who has more than 25 or 30 colonies.

Now while I have spoken of opening a hive noiselessly, cautiously, and without jarring, do not get the idea that lots of time must be spent on each hive. On the contrary (but always having these points in view), the quicker any hive is opened, throwing the full light onto the colony at an unexpected point, the less liable are they to rally to a defense. By opening the hive gently but quickly, one will soon get so that before he has a chance to think twice the hive is opened and a frame out. Smoking at the entrances drives the guards from their place as sentinels, while the smoke floating over the tops of the frames seems to tell them "house on fire," while the quickly removed frame throws a flood of light into where it is usually dark, and the whole colony is so demoralized, or thrown out of its normal condition, that a fight for home is not thought of for some little time.

If our removal of the first frame is somewhat delayed, the colony relapses into its normal condition, when, unless more smoke is used, they will resent the removal of the first frame. I well remember getting the cover off a hive as here advocated, when at that moment an urgent call came from the house. On returning some two or three minutes later, I attempted to lift out a frame without further smoking, and was driven from the field with dishonor by the onslaught of hundreds of bees pouring from the tops of the frames, almost completely covering me, and singing and stinging at every "point of vantage" they could find. Where one leaves a hive uncovered in this way, never try to open it further till the bees collected on top of the frames have been stamped down between the combs with smoke.

This is the order for the beginner: Smoke at the entrance first, through the crack under the cover as the cover is raised, then over the tops of the combs until the bees are running down, then removing the first frame quickly to very fast. Don't wait for the bees to fill with honey; let them fill while you are doing what you think is necessary, or not at all. Operating in this way, you will be very free from stings. I often work a whole day with-

out a single sting, and at one time two weeks of steady work with the bees was done with only one sting, and that from pinching one when holding a frame up to the light to see if any eggs were in the cells.

One other point before closing: If through some mishap, or not getting the desired subjection expected, a dozen, more or less, of cross bees get into the air and persist in following us about like a "body guard," little peace can be had in the work of the apiary as long as these bees live. They are almost sure to be on the alert for you as soon as you enter the apiary, and keep this "guarding" up day after day. Stand up straight with your back to the wind, if there is any, when all of these bees will attack you from the front, when with a shingle, fence-separator, or a paddle of wood and wire-cloth, made for the purpose, they can all be killed in less time than it takes to tell how it is done. But if the day is still it will take longer, as at such a time they will scatter all about you so that only one at a time may be hit. But no matter what the day is, the killing of these angry bees is the only chance of any peaceful work in the apiary for many days to come.

Borodino, N. Y.

Requeening—When and Why

BY ARTHUR C. MILLER.

That fall is the true beginning of the bee-keepers' year is gradually becoming recognized. The season's crop is very largely dependent upon the attention given to the bees the preceding fall, and the principal feature of such attention is the requeening of the colonies. The more progressive among the bee-keepers regularly each fall remove all the queens from their bees and put in young ones. That the very highest results may be secured some are taking the pains to have all the young queens reared from the same mother, and as nearly as possible hatched at the same time.

To remove a vigorous queen doing full duty in a colony and replace her with a new one seems to many persons to be a grievous loss, but nevertheless it is the most profitable thing to do. Though a queen may be up to the highest grade in work this fall, next year, when most needed, she fails to meet requirements. Some queens, so far as can be seen, do just as good work the third season as the first, but it is impossible at present to predetermine which queens will be good the second or third year. Breeding of bees has not yet progressed to that point where characters are fixed, and until they are, and until the bee-keepers rear more uniformly well-grown queens, it will be wise to follow the plan of annual requeening. And even under this method, and with the best of care, some queens will not produce colonies as good as the others.

The best time to requeen depends somewhat upon the honey-flows of the section one is in, but it is customary to get the queen in after the main flow and before the last flow of the season. By putting her in after the main flow

American Bee Journal

the bees' work is not interfered with, and by getting her in before the last flow opportunity is given her to supply an abundant population of young bees which will aid in the ripening and placing of the supplies for winter. Successful wintering of the colony is largely dependent upon the bees hatched late in the fall, and still more important is the strength they give the colony in the spring when breeding is active. The rapid shrinking of the bee-population in the spring known as "spring-dwindling" is due to an excess of old bees and a scarcity of young ones.

In the latitude of southern New England, mid-August is the favored time for requeening; farther north it is done earlier, and farther south later. Sometimes after the queens are put in no nectar is to be secured by the bees, and hence the queens do little or no laying, much to the bee-keeper's disappointment and disadvantage. A slight and constant supply of food will cause the queen to lay freely, and the desired population of young bees will be secured. The simplest, most effective and most economical method for this purpose is known as "Simmins' soft-sugar plan." A "division-board" feeder is filled with the soft, cream-colored sugar variously known as "A" or "Coffee A" sugar, and is hung in the brood-chamber next to the side of the hive, one or two frames being removed to make room. Water should not be added to the sugar. The bees will lick away steadily at this and use it as food. It seems to be all consumed by the bees and the brood, none of the liquefied sugar being stored in the combs.

If the bee-keeper has neglected to requeen early in the fall, it should not deter him from requeening at all. A young queen put in so late that she will scarcely begin to lay before the colony clusters for cold weather, is far better than an old one left there.

Where a colony has a vigorous queen, one that is keeping the population large, it is the practise of some, in sections where a fall crop is usually secured, not to requeen such colony until after the first killing frost. In the hands of the skilled bee-keeper this is often good policy, but may prove disastrous with a beginner.

An advantage of the annual requeening system which is not often spoken of is the uniformity of colony conditions produced. If the work was done at the proper time, and at about the same time, all the weak colonies were either thrown in with the others or built up with brood and bees from the others, the following spring all the colonies will be very nearly alike, and if there is superiority in work of one over the other it can be pretty safely attributed to the queen, and she can be used as a breeder for the season's queens.

Providence, R. I.

Mendelism and Heredity Applied to Bees

BY DR. A. F. BONNEY.

There are two factors which will have to be dealt with hereafter in rear-

ing queen-bees, in addition to the puzzle of parthenogenesis and the problem of mating—and these are Mendelism and Galton's Law of Ancestral Inheritance.

That some pleasing results have been secured while the experimenters have been working in a strictly empirical manner, it is not enough. Bee-keepers are, or have been, satisfied with almost anything. They have accepted queens shipped by mail which could not possibly amount to anything unless to furnish eggs for another generation of queens, and such progeny must of necessity be variable if not eternally deficient. So far as I am concerned, I shall never again try to rear queens or good workers from queens sent in any other way than in nucleus and by express. I think one queen secured in this way early in the season will be worth a score sent by mail.

Any one wanting to post up cheaply on Mendelism, can secure some fine articles by getting from the Scientific American supplements containing them. These cost but 10 cents each, and are splendid. Those who wish to go deeper into the subject can get from the same office "Breeding and the Mendelian Discovery," by A. D. Darbshire, at an outlay of but \$2. I have another work which costs more, and books can be got for less (as low as \$1), and any of them will be a great help to the student who, like the writer, wants to go to the bottom of the matter.

Briefly recited, Galton's law is that an offspring inherits half of its nature from the parents, a fourth from the grand-parents, an eighth from the great-grand-parents, and so on into the decimals. It would seem from this that it would be easy to have several generations of pure-bloods, and thus solve the problem of breeding truly; but, unfortunately—if we may question the Creator's work—there is still another factor to deal with—atavism—the tendency to revert to some ancient ancestral type, a something which, skipping father, will go back of even the grandfather, and from some remote and mean forefather or forbear choose an undesirable trait and spoil our reckoning; and the writer suspects that this is much more apt to happen with insects than the higher forms of life.

To make much progress in the study of eugenics, biology and heredity, one must be working independent of an income, and most of our great experimenters are, large sums having been set aside for their use, and I regret to find that bee-keepers can not hope to do much. In the first place, our time is limited to two or three months in the summer, and if we fail to get what we want we are obliged to wait another year, which makes the rearing, intelligently, of queens, in the north half of the United States, at any rate, about as slow as the rearing of blooded cattle. If this looks unreasonable stop and consider how difficult it is to rear a queen and get her to give you brood (to say nothing of another queen) the same season. Last season I had hardly a drone in my yard on account of a lack of rain.

I can imagine the protests which will arise to this, and the advice I shall receive, but I am not alone, and in time

may be able to make myself better understood. What I now want is to get bee-keepers to approach more intelligently this matter of breeding bees (queens), for surely a worker which lives but a month can not count.

What I hope to be able to do—as there are few bees near me, and some of them pretty pure Italians—is to develop a strain of bees which I can rear a queen from and say: "At least two-thirds of the queens reared from this bee will do so-and-so as to honey-gathering," for that is what we want, and if a colony will, in a normal season, store 100 pounds of honey, I for one do not care if they swarm every day. It is honey we want, not five yellow streaks, not long tongues (on paper), not bees so gentle that the babies can use them for playthings—just honey!

I want to close this rambling article by asking a few questions. Of what use is a 5-banded bee? Will one or two more yellow bands increase the tendency to store sweets? I wonder.

What bee-keeper in the United States, or the world, has as yet developed a strain of bees which will breed true to type? Remember that we have strains and breeds of pigs, chickens, horses, ducks—almost everything in the way of domestic animals that we can depend upon to give progeny in no way inferior to the parents. The breed or strain is developed. Dr. Phillips writes me that the Italian queens we get from Italy are variable, and have to be bred in this country for improvement!

Can we ever expect to get the best results by using queens that have been sent by mail, sometimes across the ocean and continent? Mr. Ed Miles, of the Miles Honey Co., writes me:

"Let me whisper in your ear, if you ever find a queen that has gone through the mails that will produce a colony of bees superior to our best 'mixed bees,' you will have found something I never have, and I've purchased quite a few queens through the mail."

I'd like to quote his whole letter, as he is intensely practical—and we are "scrapping" all the time.

Finally, while Mendel discovered some wonderful things about plants and flowers, it was left for later students to show equally startling results with mice and the higher vertebrates, and it is now practically demonstrated that his laws will apply to the human race as well. Several years of eugenics and Mendelism makes it seem almost certain that in the latter we have a solution of the fundamental problem of heredity, and I want to apply it to the bees.

Buck Grove, Iowa.

"The Amateur Bee-Keeper"

This is a booklet of 86 pages, written by Mr. J. W. Rouse, of Missouri. It is mainly for beginners—amateur bee-keepers—as its name indicates. It is a valuable little work, revised this year, and contains the methods of a practical, up-to-date bee-keeper of many years' experience. It is fully illustrated. Price, postpaid, 25 cents; or with the American Bee Journal one year—both for \$1.10. Send all orders to the office of the American Bee Journal.



American Bee Journal

DR. MILLER'S ANSWERS-

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Management for Increase.

1. To increase in spring would the following be a good plan: Take from a populous colony that you think will swarm the coming season, one frame of brood with bees and queen adhering, and place this frame in a hive-body filled with empty frames or foundation, placing it underneath the original body with screening between the two; supply the old brood-body on top with a new queen in a cage, so arranged that the bees will release her in 3 or 4 days. The top body should have an opening for egress and ingress.

By this means I should think that nearly all the field-bees would go in the new body underneath, and the remaining bees and brood in the top story should readily accept the new queen, and the two combined by their mutual heat would rapidly develop. In 3 or 4 weeks the top colony could be removed to a new stand, thus adding more strength to the bottom colony. I think it would also be well to place the Alexander feeder under the bottom colony and by thus feeding stimulate and help rapid increase.

2. If feasible, would you advise that the opening to the top section should be on the same side, or opposite to the lower section?

MISSOURI.

ANSWERS.—1. The plan ought to work all right, only there is a possibility of snags. If you operate early in the season, the colony will not be very strong and the weather not very warm, and the division of forces will retard rather than advance progress. As a rule it is not wise to think of dividing before about the time of harvest, and at that time you will have supers in the way. Better not try it on a very large scale.

2. Let both openings face the same way. Then when you take away the upper story the field-bees that return from it will the more readily find the entrance of the lower story.

Queen-Cells and Re-queening with Cells, Etc.

1. What do you consider the best method of getting choice cells built? I will say that I have always removed the queen and brood from a strong colony and fed them 3 days before giving cells. What I wished to know was whether there is a method of producing better cells than the above will.

2. When requeening with cells in a cell-protector, is it safe to place the cell in the hive at the time the queen is removed?

3. I want to thank you for the questions you have answered for me. I have troubled you a number of times. I have learned much from your question-box.

OHIO.

ANSWERS.—1. I don't know. All things considered, I think I would prefer the plan given in "Fifty Years Among the Bees." Briefly it is this: Give to your best queen a frame with small starters of foundation. In a week or less the frame will be partly filled with comb and this will be filled with eggs and young larvae. (If the colony be very strong,

there is danger of too much drone-combo in your frame. In that case it is well to give 2 or 3 such frames.) Trim off the edge of the comb so as to leave very few or no eggs. Put this comb in the center of a strong colony from which you have just taken the queen and one frame of brood. You have left all the old frames of brood but one, and of course the bees can build cells on all those old combs if they want to. But they won't want to. That tender virgin comb suits their taste so well that cells will be built upon it entirely, or almost entirely. Of course you don't need to use any wild cells. With their hive left full of brood I fancy the bees may be in a little better heart than if all brood be taken away. At any rate I don't believe it is possible to get better cells by any other way, and the trouble is very little.

2. The cell is supposed to be safe at any time, queen or no queen. It is covered except at the extremity, and bees tear into cells at the side and not at the end.

3. If others think the same as you about the answers, I suppose we ought to thank you for sending in the questions, for without the questions there would be no answers. Allee samee, the kind words of appreciation I get from you and others do me a whole lot of good, and make me try to make the answers just a shade better in the future than they have been in the past. So send along your questions.

Finding Queens with Carbolic Acid—Virgin-Queen Management.

1. In the January number of the American Bee Journal, I have read with much interest the item of Mr. Geo. H. Redford, on how to find the queen with carbolic acid. If this works all right without injuring any bees, what a blessing for the bee-men, as it is sometimes impossible to find the queen when the colony is very strong. What a blessing for the men that need bees by the pound. Now, I would like to know how strong must be the carbolic acid—is 10 percent all right?

2. What becomes of the drones when all the bees are in the screen box? Will they assimilate with the queen below?

3. I would also like to know how long a virgin queen can be kept in a Rauchfuss cage without injuring her welfare as a breeder,—virgin to be kept in the upper story of a hive, queen-excluder between the two bodies, and reigning queen down below.

4. I have in my mind a plan that would be like this: June 1st I would insert a frame with full foundation in my best breeding hive; then 3 days later I would put another colony on top, put 2 brood-frames with brood and bees, and the 3-day old foundation comb between the brood, and separate the 2 bodies with a queen-excluder, and keep the queen below. I suppose that the bees will go right at it and build queen-cells on that comb foundation. In about 10 days the queen-cells should be capped (June 13th). Now I would cut all the ripe queen-cells, put them in Rauchfuss cell protectors (with candy in the hole, so that when queens

emerge they have something to eat), and hang the cells in Rauchfuss cage in a Hoffman frame in the same hive-body for further use. After all the queens emerged, sometimes by June 15th, the white clover will be blooming, and now will be my time to shake all my colonies for the comb-honey harvest, the usual way, to put a new hive with full foundation on the old stand, and the beeless brood on a new stand.

Now I would requeen all my colonies by killing all the queens, and in the evening of the same day, let a virgin run in each of these queenless hives where there is no brood, only supers on top. The rest of my virgins I would put in each of these beeless-brood hives I have shaken off, and if I have any virgins to spare, I would keep and feed them in Rauchfuss cages until I am sure that every queen is safely introduced, and is also laying after she is mated. Do you think this will work all right, or will it reduce my honey crop?

Or do you think to do the same plan I have mentioned after the honey-flow is over, the end of July or the first part of August? But I have heard that the best queens are reared in the honey season, so I would prefer the first plan if possible.

5. To put the virgins in these (broodless) beeless hives, but full of brood that I have shaken off, must I leave some bees in the hives for the virgins, or will bees hatch out fast enough to take care of the virgins? I intend to put those virgins directly in without a cage.

6. When shaking a colony into a hive with new foundation, is it necessary to put in one frame of brood with queen to hold the bees, or will it work just as well to put in only foundation and no brood at all?

WISCONSIN.

ANSWERS.—1. I think it is a fair supposition that Mr. Redford uses the acid undiluted. He puts 3 or 4 drops on top of the fuel in his smoker. So few drops as that would hardly have enough driving power if he used a 10 percent solution. A 10 percent solution might do to moisten a cloth with which to drive bees, but 3 or 4 drops in a smoker is quite a different thing.

2. The drones will be caught with the queen. If very many in number, they will of course make some trouble as to seeing the queen.

3. I should say the shorter the time of such confinement the better. Still I've had a virgin confined 2 or 3 weeks without seeming to be hurt by it. At other times I've found her dead in less than that time.

4. You can tell best how a plan will work out by putting it actually to the test; but it may be well to mention some things in which there may be variations from the program you have laid out. June 1 you put a frame of foundation in your best colony, and you expect to find it filled with eggs 3 days later. You may not be disappointed, and again you may. The queen may lay in that frame in less than 24 hours, and she may not lay in it until a week or more has passed. I remember putting in such frames and in some cases the bees plumped them full of honey, just as if they supposed they had been put in for surplus honey. But suppose the queen begins to lay in that foundation within an hour after you have put it in the hive, although such a thing is exceedingly unlikely. Then 3 days later, which will be June 4 (not June 3), you put that frame of foundation with its eggs into an upper story over an excluder, and you suppose the bees will go right at it to start queen-cells in it. Very un-

American Bee Journal

likely. Bees rarely build post-constructed, or emergency, cells over eggs. They prefer larvae to eggs, and as there are larvae in the combs of brood on each side of the foundation-frame, those larvae would be what they would use if they should start cells right off. However, they are not likely in any case to start cells so soon over the excluder, so long as there is a laying queen under it. I don't know for certain what is the average, but so nearly as I can remember I think they will be spry enough if they start cells in 3 or 4 days.

Before we get any farther, however, it may be well to mention that there is a good deal of danger that you will be disappointed as to the number of cells started. A good laying queen is below the excluder, and the bees are in no great panic about getting the cells started, and what's more, they are not greatly impressed with the need of starting a large number. So there may be only one or two started, and that would hardly suit your purpose.

Suppose, however, there is no hitch in the program, and that the queen begins to lay in the foundation within a minute after it is put in the hive, and the bees start cells within a minute after it is put over the excluder. In that case you would not have virgins emerging from their cells June 15, as you figure, but June 16 at the very earliest, for 15 days is as short a time as you can count on from the laying of the egg to the emerging of the virgin. With all the chances for delay, June 20 might come nearer the mark. This matter of delay, however, is not a thing of vital moment, but the probability of a small number of cells and the possibility of none at all may be serious. On the whole, you will do well to put that frame of foundation with its eggs into the center of a strong colony from which you have removed the queen, and then you will come pretty close to the plan given in "Fifty Years Among the Bees," which plan I have followed with great satisfaction.

You will now shake a swarm, kill the queen, and in the evening run in a virgin. If the virgin be young enough, she will not be molested, but the loss of the laying queen when there is not as yet very much done in the way of starting a brood-nest will have a discouraging effect on the bees, and may cause an unpleasantly large number of colonies to desert their hives.

Some of the virgins will be lost on their wedding flight, but even if there be no such loss, it will be 8 to 16 days before they will be laying, meaning the loss of just so much in the strength of the colony which may mean a serious loss in the honey-crop.

If you wait till later you can still rear your queens without interfering with the honey-crop, unless the harvest should be very late.

5. The virgins may be all right without any bees, but the loss of brood is to be considered, and if a cold night should come it may be very heavy. Even with good weather it is better to leave enough bees to feed and keep warm the young brood.

6. Better have the frame of brood. Without it there will likely be cases of desertion. But some think it better to take out the frame of brood after 3 or 4 days.

Bees Robbing Weak Colony.

When a person goes into his apiary and finds bees robbing out a weak colony, what is the best thing to do? I just

found the bees robbing out a weak colony, and I did not know what to do.

ARIZONA.

ANSWER.—Just what is best to do depends upon how weak the colony is, what kind of a queen it has, etc. If it has a good queen, and has frames enough to cover 3 or more frames of brood, then it is worth while to make efforts to save it. If the robbing has been going on only a little while, it takes less efforts to stop it than after it is well under way. Closing the entrance so as to leave room for only one bee to pass at a time may be enough. Painting carbolic acid about the entrance will help. Indeed, enough carbolic at the entrance will stop a pretty bad case, but the carbolic must be renewed as often as it loses its strength. A pretty good plan is to pile hay or straw in front of the hive and a little hay at each side, making it as high as the top of the brood-chamber, and then keeping it well drenched with water. Perhaps better than either of these is to take the hive down cellar, keeping it dark, and leaving it there two or three days. But when you take the hive from its stand, be sure to put in its place an empty hive similar in appearance to the one removed. Unless you do this, as soon as the robbers find a vacancy where their prey was, they will think they have made a mistake as to the hive, and will pitch into one of more of the neighboring hives. If they find an empty hive in the old place, they will think it has been all robbed out and will give it up.

In probably the majority of cases, unless the robbing has been started by some foolishness on the part of the bee-keeper, there is something wrong with the queen and the colony is not worth saving. In that case it is best to do nothing. Let the robbers go on and clean out the hive, and when they are done they will quit, whereas if you meddle in any way there may be some danger that it will start the robbers at some neighboring colony.

Plans for the Prevention of Swarming

What are the Alley and the Swarthmore plans to prevent swarming? CALIFORNIA.

ANSWER.—I don't know. If there is any special plan of swarm-prevention called the "Alley plan" or the "Swarthmore," I do not remember to have seen it.

Getting Brood-Combs Drawn Out

How and when is best to have brood-combs drawn out, or made from full sheets of comb foundation?

KANSAS.

ANSWER.—Give such frames of foundation any time when bees are gathering more than enough honey for their daily needs, if you think they will not stop gathering before they have time to finish the combs. Of course, that's as much as to say that the very best time is at the beginning of a harvest that you have good reason to expect will last two weeks or more. A strong colony, of course, will need less time than a weak one.

Sweet Clover—Cleome—Rape—Minnesota Bee-Country

1. How far north and south will sweet clover thrive and do well? Would it do well in cut-over timber lands?

2. Where can the seed of the Rocky Mountain Bee-Plant (*Cleome integrifolia*), that Dabard in "First Lessons in Bee-Keeping" refers to, be secured? Would it be a good thing to plant here?

3. Has rape any honey-value to make it worth planting for bees alone? When should it be planted to yield the most honey?

4. What kind of a bee-country is northern Minnesota going to be where it has been logged off? Does it offer any better possibilities to the bee-keeper than the Ozark country of Arkansas?

IOWA.

ANSWERS.—1. I suppose if sweet clover may be considered as having any native

place it is Bokhara, in Asia, about 40 degrees north of the equator. At any rate, it is called "Bokhara clover," and years ago that was the chief name for it. According to that, one would suppose that it would be at its best on the parallel of 40, which runs centrally through Ohio, Indiana, Illinois, Utah, and Nevada. But it does not seem to be very limited as to its habitat. I think it succeeds about as far north as bees are generally kept. Mrs. Lucinda Harrison failed to make it grow in Florida, but I have an impression that it succeeds as far south as Florida, in Texas. It ought to do well in cut-over timber-lands.

2. Leading seedsmen should have it, or be able to get it for you.

3. Rape is a fine honey-plant, but neither that or any other plant will pay to sow for honey alone, unless it be on waste land where it will take care of itself. Spring is probably as good a time as any to sow rape.

4. It ought to be good. I don't know how it will compare with the Ozark country of Arkansas.

Caging Queens and Making Increase

1. In "ABC of Bee Culture," Mr. Somerford says in speaking of increase, page 310, to "cage queens in all your fancy stock." Please explain.

2. Can you cage a queen and put her in a colony having a laying queen? If so, how long can she be kept there? CALIFORNIA.

ANSWERS.—1. He says, "Remove the queens or cage them in all your fancy stock." That is, remove or cage them in those colonies you want to start queen-cells, since a queenless colony will be sure to start cells. It is well to understand, however, that a colony with its queen caged is not so certain to start cells as one which has no queen in the hive, nor is it likely to start so many cells.

2. Yes, and she may remain weeks, or she may be dead in a few days. She will be more sure to remain in safety if the cage is provisioned than if she has to depend upon the bees to feed her.

Preventing Swarming—Half-Dead Bees

1. If I put on the supers before the bees swarm, will that keep them from swarming?

2. Some of my colonies are now (Feb. 8) carrying out quite a few bees about half dead. What do you think is the cause of it?

TEXAS.

ANSWERS.—1. Sometimes it will; generally it will not. Giving plenty of room is one of the things that helps to prevent swarming, but it is only a help, and not a reliable preventive.

2. It may be that the larvae of the wax-moth, or "wax-worms," as they are called, have made their galleries along the cappings of the sealed brood, mutilating the young bees in the cells, which are then dragged out by their older sisters.

Feeding Thin Syrup

1. How thin a sugar syrup may be fed to bees without danger of spoiling after taking into the hive?

2. Is there any ingredient that may be put into the syrup to obviate the difficulty? and are there conditions as to weather, or otherwise, affecting the matter?

VIRGINIA.

ANSWERS.—1. Early in the season, when bees are flying daily, it will do no harm to feed them syrup just as thin as they will take it, say one part sugar to 10 of water. And the same is true until fairly late in the season. As the weather begins to be cool toward fall, the syrup must be given thicker and thicker, lest the bees do not have time to evaporate it sufficiently, and as late as November it will not be well to feed a thinner syrup than 2 parts sugar to one of water, and 2½ of sugar to one of water is still better.

2. The weather does not make very much difference, although the drier the weather the less danger of too much water. But I don't know of anything that you could put into the syrup to counteract the effect of too much water, unless it would be a sheet of blotting paper, and I'm afraid that would hardly answer.

Cleansing Beeswax—Comb and Extracted in Same Super

1. I have about 40 pounds of beeswax which I rendered from old combs that I intend sending to the factory to be worked into foundation. The cakes are dirty. How can I remelt and clean the wax?

2. Can I use shallow extracting frames in

American Bee Journal

the regular dovetailed super with part of the space filled with comb-honey sections, and produce both in the same super to good advantage?

WISCONSIN.

ANSWER.—1. The chief secret of getting the impurities out of wax lies in keeping it liquid a long time so that the impurities will settle to the bottom, or, as it is generally expressed, letting it cool slowly. Melt the wax in a vessel of tin, or something else than iron, having some soft water with it. When heated it may be allowed to cool in the same vessel, or the wax may be poured into another vessel. The larger the body of wax of course the longer it will be in cooling, and so the better chance for the impurities to settle. A considerable quantity of water helps also to keep the whole body warm longer. Cover over closely in any way you like, and you may also wrap something around the whole to retain the heat. If it be set on a cook-stove at night with a slow fire, and the fire allowed to die down, that will help. All of these things, you will see, are for the purpose of keeping the wax hot as long as possible. When cold, of course the dirt is to be scraped off the bottom of the cake.

2. Yes, some think this a desirable thing to do. Just how much advantage there may be in it depends upon your market. If you can dispose of extracted honey to good advantage then the plan is advisable. If you have no market for extracted, and a good market for comb, then the plan is not advisable.

Hive-Ventilation in Outdoor Wintering

What is the least ventilation that will suffice for a strong colony outdoors during freezing weather?

The hive-entrances of several of my colonies became blocked with solid ice during a very cold time suddenly following a day during which the water and soft snow collected upon the alighting-boards, and I would use a lower chamber with additional ventilation high up, if too large a hole is not necessary.

VIRGINIA.

ANSWER.—For a strong colony an entrance $8 \times \frac{1}{4}$, $4 \times \frac{1}{2}$, or any other size equivalent to 2 square inches is little enough. Your idea of a lower story with an entrance high up is good. You might do worse than to bore a small hole in the front of your present hive, half way between bottom and top. So long as the entrance is clear to the bottom, no matter what size, there is always some danger of its being closed if there comes a damp snow to clog the entrance and then freeze. I suspect you would be well pleased with bottom-boards 2 inches deep. They're great in summer-time used with a bottom-rack to prevent building down, and in winter you could close the lower part of the entrance and have the opening nearly 2 inches from the bottom. That would meet your difficulty, and also get rid of the danger of having the entrance clogged with dead bees.

Caging a Queen in Own Colony

How long can a queen stand confinement caged within her own colony without injury? My experience in that line is not sufficient, as I wish the information from different localities for the benefit of bee-men under present conditions here.

CALIFORNIA.

ANSWER.—I've had a large experience with queens thus caged for 10 days, and it seemed to do them no harm. Beyond that my experience is limited. In a few cases they may have been caged 3 weeks. Will others, especially Californians, give us their experience?

Preventing Honey-Granulation

1. I am surprised at the people in general here in San Francisco in regard to pure honey. How hard it is to convince them that honey will granulate from exposure to the cold. Nine-tenths of the people do not believe that they get pure honey; as they are so accustomed to being humbugged they expect it at every corner. I tell them the pure food law does not allow any one to misbrand or mislabel goods pure unless they are really such. I have competitors telling their customers their honey will not granulate. I think they use something to keep their packages from granulating. Still they label it "pure" honey.

2. Can vinegar be used to advantage without spoiling the flavor? If so, how much to the gallon? In the October Ameri-

can Bee Journal, glycerine was mentioned as an article to keep honey from granulating.

I have much trouble in this matter with most people who do not know or seem to care about pure honey. They say I put too much sugar in it!

CALIFORNIA.

ANSWER.—1. If there is really adulteration in the case, the pure-food authorities might be set on their trail. But the federal authorities have nothing to do in such a case unless the goods in question are shipped from one State into another. Adulterated goods that do not go outside the State are only subject to State laws.

2. It is not advisable to try anything of the kind. Even if it would act satisfactorily, there would then be some ground to accuse you with tampering with the purity of your honey. Possess your soul in patience, and in time you will come out ahead. Patiently explain what granulation is, and some will learn to prefer the granulated honey, while others will, in response to your instruction, learn to liquefy properly the candied article.

An Unusual Queen Experience

In the spring of 1911 I had an experience with a queen in one of my hives that I can not account for. The results were so strange that I would like to know if any up-to-date bee-keeper ever had the same experience.

Last March I put my bees on the summer stands, and while taking them from the cellar I noticed that one colony was very quiet, so when a warm day came I opened the hive and found that there were not over 40 or 50 bees with the queen. As there was plenty of honey in the hive, and not having any use for the queen, I closed it up. About 8 days later I again opened it and found the queen alone on a comb. Thinking that the bees were in the field I waited a half hour, but as none returned I closed up the hive-entrance to prevent the other bees robbing, and left her.

About 10 days later, having use for the combs, I opened the hive. You can imagine how surprised I was when viewing the combs to find the queen still there as quiet as if the hive were full of bees. I did not have the heart to kill her, and in the end I went to a strong colony and took a frame with all the bees and placed it in the new hive with the lone queen. On the fourth day I opened it, expecting that they had killed the queen, or returned to their own hive, but judge my surprise when I found the queen all right with a small batch of brood, which, by July, was as strong a colony as the rest. Now, this may be a common thing to some of the older bee-keepers, but I thought that a queen could not live alone.

ILLINOIS.

ANSWER.—You have had a unique experience. At least I never heard of such a case before. To be sure, it is the usual thing when a colony dies for the queen to be the last to succumb, but to have the queen live all alone as late as in April for 10 days is what you will probably never experience again.

Keeping Bees from Objectionable Places

Referring to the editorial on "Salt and Vinegar in Syrup," in the January issue of the American Bee Journal, can you tell how salt should be used to keep the bees from such objectionable places as Editor Herrod mentions when no syrup is fed? I have noticed bees at such places at different times during the summer months when the bees were gathering their own stores, but, of course, it would not be feasible to feed syrup the year around for the sole purpose of giving the bees salt.

Perhaps you know of some other way of keeping the bees from these places. If so, any information you may give will be greatly appreciated.

NEW YORK.

ANSWER.—The first question to be answered is: What is the attraction for the bees at these places which are objectionable to bee-keepers? If we know that, there is a fair chance to offer a greater attraction elsewhere. For a long time it was generally held that salt is what the bees were after. In that case the thing to do is to offer salty water in an unobjectionable place. Latterly, however, there is a growing belief that the salt has little or nothing to do in the case, but that warmth is the attraction. The bee prefers warm water, and very likely prefers to be in a warm, sheltered place while it is loading up with water. That gives us our cue. Give the bees water in a sheltered, sunny place, where the water will be com-

paratively warm, and as David Harum says, "Do it fast." For bees are great creatures of habit, and if you offer them water in a desirable spot before they get in the habit of going elsewhere it will be a great point gained.

Having chosen a desirable watering-place, I know of no better way to give the water than to give it in a pail, tub, or other vessel, with a layer of cork-chips on the surface of the water. Any grocer who gets grapes in cold weather in kegs will have these cork-chips to throw away, for they come as packing for the grapes. A layer something like an inch thick or less will answer. They will last for a whole season, but as the season advances they will become soaked so that it will be well to renew them, or at least to add some fresh chips. There must not be so few chips that the bees will drown, nor so many that the bees can not easily reach the water. Some keep the water warm by means of a lamp.

If, however, the bees have already made a start at some objectionable place, and that place is known, it may be possible to drive them from it by a sprinkling of a solution of carbolic acid.

If you think the bees want salt, then add salt to the water you offer.

Caucasians and Carniolans

Is the Caucasian bee a bad one to swarm? Is the Adel bee a sort of Carniolan bee, and can it be kept in an 8-frame hive? What kind of a cross would it be? Is it true that Carniolans are bad swarmers?

ILLINOIS.

ANSWER.—The Caucasians have not the reputation of being great swarmers, but the Carniolans have. There is no such race as Adels. The word "Adel" is a German word which Germans spell "Edel," and the word means noble or excellent. So any one may call his bees Adels, whether they are black or yellow; only, of course, it will be a misnomer if applied to poor bees.

Fastening Foundation in Brood-Frames

In using full sheets of foundation, even "medium brood" happened to warp, and after the combs were finished they showed an uneven surface, although they were put in true and straight and fastened on all sides, except below, with melted wax. To avoid this in the future my plan is to fasten a $\frac{1}{2}$ -inch strip in the middle of a Langstroth frame, running from top to bottom of the frame. The foundation comb then is cut crosswise in two, and fastened the same way as full sheets are. The combs being thus supported in the middle would likely remain more even and would not sag as they do when fastened in the usual way.

My way of fastening foundation in brood-frames is simple. I take a board larger than the frame, and on this board I fasten another board which goes inside the frame, and thick enough to occupy half the space of the frame. An empty frame is put on this board and thus the foundation sheet will come right in the middle of the frame. I use a spoon to pour on the melted wax.

Would you advise me to put a strip in each frame as described above?

INDIANA.

ANSWER.—Your scheme will work all right if you do not object to the wooden strip in the center of your frame. Some would prefer to use splints or wires. Another plan is to paint the upper part of the foundation with melted wax.

Management of Increase, Etc.

I. I want to increase my colonies without natural swarming, when they are strong in bees, and I want to have 7 or 9 frames of brood next May. I will try to build up with my first colony, set the hive off the stand, replacing a hive filled with frames having full sheets of foundation. Then I want to find the queen of the colony just taken from the stand, and take the frame of brood she is on with all adhering bees, and put it in the center of the new hive, having first taken one or two frames of foundation to make room for the easy introduction of the frame of brood, bees and queen. I place a queen-excluder over a new hive, and set the old colony on top. I want to get queen-cells reared in the top. Five days later I intend to set the old (or top) hive on a new stand. Will queen-cells be reared in the top? I will feed them properly, when they will be ready in countless numbers to enter the field of sweets.

American Bee Journal

2. I want to make a few nuclei next May or June. I want to take one frame of brood containing worker-eggs, some queen-cells, and bees just crawling out of their cells, without a queen, and put it into an empty hive, and put a board in the middle to make the smallest room for the baby colony. Is it a good plan? I intend to take some frames of brood from other colonies and shake or brush down young bees to give more bees to the nuclei, at noon. Can queen-cells be reared safely?

3. Can I put fresh snow over the entrances of the bee-hives when the coldest, windy days come?

4. If queen-cells appear in any bee-hive, can I cut them off at all, as I do not want swarms?

5. Will the colony be strong in numbers if queen-cells are cut off? Should I give more room? Will they build up combs quickly and gather honey fast? INDIANA.

ANSWERS.—1. They may start cells and they may not. You will be more sure of

cells, and will have more cells if you take away the queen for a week.

2. If I understand you rightly you will have only one frame for the nucleus. At least you should put a frame of honey, or partly filled with honey, on each side of your frame of brood. Then if you add enough young bees, as you suggest, you can rear good queens provided the queen-cells are advanced enough so the young queens are about ready to emerge. If the cells have not been sealed very long when given to the nuclei, you can not count on good queens.

3. It will be all right if the snow is dry. If the snow is wet and packs together it may smother the bees.

4. If you cut out all queen-cells it will delay swarming. Generally, however, the bees will start cells again, and if you keep cutting them out the bees will sometimes swarm without a queen-cell in the hive. Sometimes, however, cutting out the cells will prevent swarming entirely.

5. Cutting out cells will not interfere with the strength of the colony, nor with building or storing.

were short of stores, and found young brood already sealed.

Say, did any one ever see bees use sawdust for pollen? Last spring I saw them flying around the sawdust pile at a sawmill near by. I began to watch, and found they were working the finest part of the dust on their legs just as though it were pollen. This spring I have seen them do the same thing. It was oak sawdust, so they must have wanted it for a substitute for pollen.

GEORGE GUNTHER.

Cushman, Ark., Feb. 24.

Coldest Weather in Years

My bees did very well last year, but the most they gathered was fall honey and yellow in appearance. I am wintering my bees on the summer stands—the first time in 20 years—and it has been the coldest winter since Jan. 1st for I don't know how many years.

JOS. HENTRICH.

Granton, Wis.

Good Results in 1911

I have only 2 colonies of bees I bought in the spring of 1910. I had not a single swarm, but more honey from a single colony than any other man around here. Last year was considered a poor one, but I got over 200 pounds of comb honey from 2 colonies. I commenced feeding as soon as the bees came out of the cellar, and when the blossoms came I had a good, strong colony of bees. I put on the first super when the trees were in bloom, and kept putting on supers when they were about half full so the bees had always plenty of room. For feeding I give one-half sugar and one-half water, and then had a box with ground corn standing in the garden. I used flour, too, but the bees would not take the flour, but were working in the ground corn—more bees there than at the hive on a warm day.

Ogden, Iowa. M. H. ROSACKER.

REPORTS AND EXPERIENCES

Last Season Good for Bees

Last season was a good one for bees. I sold \$14 worth of honey from 2 colonies, besides what we used ourselves, and also increased to 3 colonies. So far this winter I have lost but one colony out of 5. Last winter I lost 3 out of 5. Bees were flying for the first time today since December, 1911.

Riverside, Iowa, Feb. 19. WM. ZAHS, JR.

Heavy Loss of Bees in Wintering

I don't want to be pessimistic, but, in my opinion, we will have at least a 50 percent loss in bees in this locality this winter. I lost one colony, but I got to the others in time to save them. Farmer bee-keepers with 5 or 10 colonies each have lost practically all; some had plenty of honey, but arranged so that the bees could not get over the top of the frames.

J. W. SWAILS.

Lebanon, Ind., Feb. 26.

No Snow—Short of Stores

Bees are doing fine, having cleaned out their hives in good style. We have not had any snow this winter. Bees have been out every day the last 4 weeks. Last season the honey-flow stopped Aug. 18th—no more honey after that, so the bees filled up their brood-nests with bee-bread, and some colonies are losing quite a lot of their bees. I am feeding those of mine that need it.

Jensen, Utah. G. W. VANGUNDY.

A Terrible Winter in Minnesota

This has been a terrible winter thus far, and the lowest known thermometer in the 41 years that I have been in Grand Meadow. For 13 days the mercury did not get up to zero, and for 54 days it did not get up to the freezing point.

I think that 3/4 of all the bees have died out here during the last 2 years. There has been no white clover honey for 2 years, and I have not taken to pounds of surplus honey during the last 2 seasons. It is very discouraging; but "never say die."

C. F. GREENING.

Grand Meadow, Minn., Feb. 20.

Improving the Honey-Bee

Among the many articles which I read on this subject, that of Arthur C. Miller, on page 50, seems the best for me. For some years I practised on a small scale the plan which he describes, and I have found that it works fine. My experience is, that by breeding from the best will soon improve an apiary at least 50 percent. For example, one colony stored 50 pounds of surplus honey in 1911, and went into winter quarters with an abundance of stores, and several others were of the same quality in storing honey.

Valued at Twice Its Cost

I would not discontinue the American Bee Journal for twice its cost. If at any time you do not receive remittance in good time notify me; but continue the Journal until notified to discontinue. R. H. LINDSAY.

Aylmer, Ont., Feb. 18.

Rather Severe Winter on Bees

It has been a rather severe winter on bees here. There will undoubtedly be heavy losses among those wintered outdoors. So far I have lost none, but some of the nuclei will hardly stand till the blossoms open.

Bellevue, Ohio. H. G. QUIRIN.

Prospects Better for 1912

We have had bad bee-keeping here for 3 years on account of drouth. There was but very little surplus honey last year, as most of our bees died. I think the prospects are better for this year. Honey is 25 cents per pound here. CATHARINE WAINWRIGHT.

Tilton, Iowa, Feb. 22.

Grafting Wax

Take 4 pounds of rosin, one pound of beeswax, one pint of linseed oil. Put in an iron pot and heat slowly. When all is mixed pour in cold water and then work it by pouring in until it is light color, but put oil on the hands before working it. Lay it away in a cool place until you need it. It will never run. If the day is warm when you are grafting, better moisten your hands with water occasionally, and work the wax around the graft.

LOUIS WERNER.

Edwardsville, Ill.

Rearing Brood—Sawdust for Pollen

We had an average flow of honey in the late summer and fall of 1911, and our bees had abundant stores when they went into winter quarters. We have had a very cold and disagreeable winter, but in spite of all the snow and bad weather my bees have already commenced rearing young bees. The weather has been pretty warm for the last few weeks, during the day, but snow still shows up at present. Yesterday I opened one of my hives to see if the bees

The King Bee-Keeper—Dry Spell

Mr. S. M. W. Easley, of this (Ventura) county, is 79 years old, and one of the pioneer bee-keepers of this State. He has kept bees for 53 years, and has harvested many carloads of honey in his time. In 1884 he had the largest crop of honey that ever had been taken up to that time. He started that season with 560 colonies of bees, increased them to 1250 colonies, and extracted 86 tons of honey; and had it not been for the death of a son during the honey-flow he would have added many more tons to this amount. The location he had at that time has but a small amount of the sages growing now, as the plow, fire, and cultivation have wiped out the greater part of the forage.

We are having the worst spell of dry weather we have had for many years, and unless we have rain soon many apiaries will starve out. The loss of bees will be great.

M. H. MENDLESON.

Ventura, Calif., Feb. 12.

Connecticut Convention.—The annual meeting of the Connecticut Bee-Keepers' Association for the election of officers, etc., will be held Saturday, April 13, 1912, at the Y. M. C. A. Building, Hartford, beginning at 10:30 a.m. The matter of forming a branch of the National Association will be discussed. Good speaking assured.

JAMES A. SMITH, Sec.

Hartford, Conn.

"Scientific Queen-Rearing"

No other book compares with this one written by Mr. G. M. Doolittle. He is an expert in the business. It tells just how the very best queens can be reared. Bound in cloth. By mail, \$1.00; or with the American Bee Journal, one year—both for \$1.60. In leatherette binding, 75 cents, postpaid; or with the American Bee Journal one year—both for \$1.25. Send to the American Bee Journal.

American Bee Journal

Plants True to Name.—Buyers of nursery plants are confronted with the problem of securing the varieties of fruits and shrubs they want. True, it is not difficult to find the names of the varieties desired in the catalogs. But after carefully unpacking, planting and cultivating, too often only disappointment awaits us at fruiting time. Because of these experiences with unscrupulous growers of nursery plants, the purchasing public has rightfully grown suspicious. The result is that they have placed a premium on the man and his stock whom they can trust implicitly. W. F. Allen, of Salisbury, Md., has 120 acres planted to strawberries alone, in which there are over 100 varieties. Besides strawberries, Mr. Allen grows raspberries, blackberries, gooseberries, currants, grape-vines, California privet, and other small shrubbery on a large scale. His advertisement appears in our columns, and we suggest any one wishing to buy any nursery plants will do well to write for his catalog. He guarantees every plant to be true to name, and sends a booklet on cultural directions *free* with each order. Please mention the American Bee Journal when writing.

Bee-Supply Catalogs received at this office are as follows:

G. B. Lewis Co., Watertown, Wis.
Ard Honey & Bee-Supply Co., 148 W. Superior St., Chicago, Ill.
A. I. Root Co., Medina, Ohio.
Dadant & Sons, Hamilton, Ill.
F. A. Snell, Milledgeville, Ill.
H. S. Duby, St. Anne, Ill.
A. G. Woodman Co., Grand Rapids, Mich.
August Lotz & Co., Boyd, Wis.
Marshfield Mfg. Co., Marshfield, Wis.

The Opfer Hive-Entrance Bee-Feeder.—In the spring we must feed the bees to have them strong for clover-bloom. With all the present feeders this is a troublesome



job—either the hive-bottom or covers have to be taken off every time we feed. With the Entrance Feeder shown herewith, all you have to do is to push it in at the hive-entrance and leave it there until there is no more need of feeding. It contracts the entrance, and that is what you want in spring. The size of this feeder is 7x8 inches, and $\frac{1}{4}$ inch deep, and holds 5 ounces of feed. You can feed 100 colonies in about 25 minutes.

In case of foul brood you can feed medicated syrup and your bees will build up strong and healthy, and be in good shape when clover starts, ready to shake on foundation.

I have used 75 of these feeders about 8 years, and today they are as good as ever. With proper care they will last a life-time.

In spring or in fall most bee-keepers neglect to stimulate brood-rearing—one of the most important things in having strong colonies and good wintering. It does not depend so much upon the amount of feed as it does upon regularity every night (unless the weather is too cold), and you will wonder where your strong colonies come from. Some of the many good points of this Entrance Feeder are these:

1. It is made of heavy galvanized iron and will last a life-time.
2. It reduces the hive-entrance.
3. It reaches where the bees can get at the feed even in cool weather.
4. It feeds the right amount.
5. It will not cause robbing.
6. It will not disturb the colony while feeding.
7. It permits quick work.
8. The bees will not drown in it.

I am in position to furnish all demands for these feeders at the following prices, f. o. b. Chicago: One for 20c; 5 for 18c each; 10 for 16c each; 25 for 15c each; 50 at 14c each; 75 at

13c each, or 100 for \$12. If ordered by mail, add 10c each for packing and postage.

Address all orders to—A. H. OPFER, 117 N. Jefferson St., Chicago, Ill.

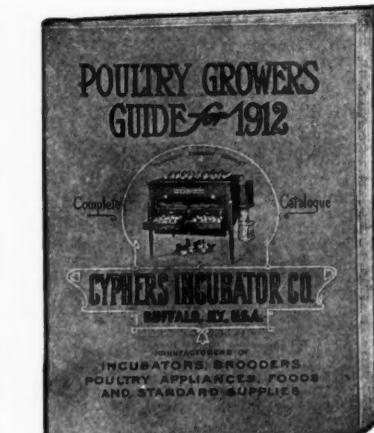
Easy to Use.—The Pilling Milk Fever Outfit and the Pilling Garget Outfit should be on hand now as the time is at hand when those accidents of parturition—milk-fever and inflammation of the udder (garget)—are apt to occur.

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For prices on larger quantities and description of each grade of Queens, send for Free Catalog. Send for sample Comb Foundation.

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American Bee Journal

Wants, Exchanges, Etc.

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

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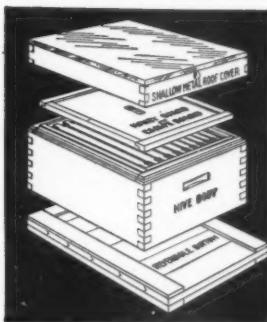
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Quirin's famous improved Italian queens, nuclei, colonies, and by the pound, ready in May. Our stock is northern-bred and hardy; five yards wintered on summer stands in 1908 and 1909 without a single loss. For prices, send for circular. 3A2t Quirin-the-Queen-Breeder, Bellevue, Ohio.

GOLDEN and 3-band Italian Queens (strictly free from disease). Tested Queens, \$1.00 each; 3 for \$2.75; 6 or more, 85 cts. each. Untested, 75c each; 3 Queens \$2.00; from 6 to 50, 65 cts. each. Bees by the pound, \$1.00. Nuclei, per frame, \$1.25. Safe arrival and satisfaction guaranteed. C. E. Bankston, 2A2f Buffalo, Leon Co., Texas.

FOR SALE—131 acres of extra-fine farming land in the famous San Saba Valley. All tillable, enclosed with 8 wire fence; good tank of water, 20 acres fenced off; 10 acres in cultivation. Plenty of oak and mesquite timber; good bee-location, and will grow pecans—near largest pecan orchard in Tex. If sold at once, \$35 an acre. L. B. Smith, Rescue, Tex.

FOR SALE—An apiary of 240 colonies with all appliances for managing this number of bees in an up-to-date manner for extracted honey. In the far-famed Hudson River Valley, on a location which has not failed in 32 years to give a paying crop of honey. The encroachment of the city, which necessitates the removal of the bees, the cause of selling. Correspondence solicited from those only who mean business. James McNeill, Hudson, N. Y.

Dr. Peiro will continue to give the readers of the American Bee Journal free advice regarding the subject of SURGICAL and MEDICAL treatment. Many have availed themselves of this offer. Return postage is all you need to send. Address, DR. PEIRO, 2148 Sunnyside Ave., Chicago, Ill.



Pat'd 1878, '79, '80 & 1883

Insist on "Old Reliable" BINGHAM SMOKERS, for sale by all dealers in Bee-keepers' supplies. For over 30 years the standard in all countries. The smoker with a valve in the bellows, with direct draft, bent cap, inverted bellows and soot-burning device.

Smoke Engine, 4-inch, each, \$1.25; mail, \$1.50. Doctor, 3½-inch, each, 85c; mail, \$1.10. Conqueror, 3-inch, each, 75c; mail, \$1.00. Little Wonder, 2-in., ea. 50c; mail, 65c. Honey-Knife, 60 cents; mail, 80 cents.

Famous Queens! From Improved Stock. The Best That Money Can Buy

Not inclined to swarm, and as for Honey-Gathering they have few equals.

Three-band, Golden, and Carniolans—bred in separate yards; ready March 20th. Untested, \$1.00; 6 for \$5; 12 for \$9. Tested, \$1.50; 6 for \$8; 12 for \$15.00. Breeders of either strain, \$5.00.

Nuclei, with Untested Queens—1-frame, \$2.50; six 1-frame, \$15; 2-frame, \$3.50; six 2-fr. \$20.40.

Nuclei with Tested Queens—1-frame, \$3.00; six 1-frame, \$17.40; 2-frame, \$4.00; six 2-frame, \$23.40.

Our Queens and Drones are all reared from the Best Select Queens, which should be so with the Drones as well as the Queens.

We guarantee safe arrival and satisfaction.

D. E. BROTHERS,
2A9t Jacksonville, Ark.

Please mention Am. Bee Journal when writing.

American Bee Journal for 1911.—We have a number of complete volumes of the American Bee Journal for 1911, which we offer for 60 cents for the 12 numbers, as long as they last. Or, should there be among our subscribers those who would like to have any copies of the American Bee Journal for 1911 to complete their volume or otherwise, we will fill such orders at 5 cents per copy. Address all orders to, Geo. W. York & Co., 117 N. Jefferson St. Chicago, Ill.

American Bee Journal

The Orange: Its Cultivation and Commercial Value

The Washington Navel is easily a peerless prince among fruits. To plant and care for it is "a gentleman's job," and when in the hand of a skillful orchardist, and planted "in the right place," possible cash returns are incredible.

The following item that has been going the rounds of the press in this State has elicited many comments:

"C. B. Pulver, of Santa Ana, reports cash returns of \$1800 an acre for two acres of oranges just marketed; that is, \$3600 for the two acres. He states that he made no exceptional effort, and gave the trees only the usual allowance of enrichment."

This was published in the The Pacific Rural Press of Jan. 6, 1912. E. J. Wickson, Dean of the State University at Berkeley, is editor. He is well known as an eminent authority on citrus fruit, and a most conservative and scrupulously careful man. No such item could reach his columns unless he were entirely satisfied as to its truthfulness.

Shall we brand this statement as "incredible," or shall we accept it as probably true?

Similar items have appeared in print frequently in the past 8 or 10 years, the returns given ranging from \$500 to \$1200 an acre. Many of these have been so carefully corroborated as to leave no tenable doubt of their truthfulness. Occasionally it was 20 to 50 acres instead of only two, giving the large returns.

But the important point is not the credibility of a few isolated freaks, but rather what may we state as a reasonable average for all the ground planted. One thing is certain, somebody is making a whole lot of money in California off of fruit in general, and oranges in particular.

Official statistics show our people have the largest per capita wealth of any State in the Union, being \$2235 for every man, woman and child in the State. New York comes next with a per capita wealth of \$1868. But New York has a per capita State debt of \$57.64, while California's State debt is \$9.71, giving us the largest per capita wealth, and at the same time the smallest per capita debt. Surely, our people are not making a financial failure in "the fruit-business."

Accepted statistics show we have 10,000 orange-growers, with 70,000 acres in "bearing orchards," and that our people received approximately \$34,000,000 cash returns from oranges last year. Dividing the returns by the 70,000 acres in bearing, gives a cash return of \$485 for every acre reported by our assessors. Again dividing the 70,000 acres among the 10,000 growers, we have but 7 acres for each of them, with an average income of \$3400.

Haven't we here reasonable justification for encouragement given to the man who modestly ventures with "just a small orchard" of only 7 acres, expecting to support a family?

But if such returns are actually received, then what kind of prices are being paid for orchards in full bearing?

In nearly all cases we find bearing orchards are bought by investors and for an income. The most nervously

careful man you find using money is "the investor." He not only counts the present returns, but he also carefully calculates the future. When he buys bonds, he must be content with about 5 percent; but the statistics quoted show the gross returns from oranges gives an income of over 17 percent on the accepted statement of \$200,000,000 invested in the orange industry.

Groves began changing hands but a few years since, at about \$500 an acre. The increase has been steady and strong, and what was once sold for \$500 is now held at \$1500, and "the rare cases" reach \$3000 to \$4000 an acre. The accepted average yield of \$485 is 20 percent on a valuation of \$2425 an acre. This, then, would be

States. I answer that Washington Navel oranges can be grown in only one State—there is no other that is "just as good." Furthermore, we are considering "the best quality of the Navels." Such fruit can not be grown "all over California," as we so often hear flippantly stated.

The orange is exceptionally arbitrary as to its location—and that is the kind we are talking about.

To secure this you must plant where there is an abundance of water at small cost; where the climate will insure a perfectly ripe and exquisitely colored orange as early as the middle of November. It prefers "red foot-hill soil" that is deep and rich, underlaid with gravel to insure perfect drainage; where it has "a summer of at least 90 days, over which the temperature never falls below 90 degrees; where there is



ORANGE-TREES OF THE SACRAMENTO VALLEY, BUTTE CO., CALIFORNIA.

the market valuation of the whole 70,000 acres. But such a valuation would give us but \$169,750,000, while assessors' returns give us \$200,000,000 as invested in this industry—this is \$30,250,000 short in amount, and means the actual value of a bearing orchard as \$2425 is entirely too small, or less than the appraised value.

Have we not here ample corroboration of the probability of occasional returns up to \$1800 an acre for a single harvest? \$1800 an acre is 20 percent on a valuation of \$9000 an acre.

But 15 percent is regarded as "a very fair income" on cost of real estate. On such a basis an acre of ground that produces \$1800 is worth \$12,000. Remembering that thus far our oldest orange-groves are still increasing in productiveness with age, what shall we say should be accepted as "a reasonable price" for orange-groves when in full bearing?

Oh, but you say such prices for orchards are absurd, because there is such an enormous amount of unused land where oranges can be grown, and they are now produced in 7 of our

no ocean breeze or fog. Not a drop of rain or dew, nor a bit of humidity or scarcely a cloud to obstruct the continuous flow of pure, unadulterated California sunshine." If any of these are wanting, the sun will be in some measure robbed of its chemical powers to the detriment of its quality and loss to the fruit.

There must be "no black scale," no smut from scale or from fire-pots used in a desperate battle to "heat all outdoors" and prevent loss from frost.

Besides, "for the best results," you require a convenient transportation to save time and cost as well as damage to the fruit from hauling it long distances over rough roads. Only "the perfect fruit" can win the prize.

The cheapest fruit in the market is "a defective orange"—it won't pay freight. It is a mistake to plant any fruit where it will not be at its best, and this especially applies to the orange.

I repeat, the land is "strictly limited" where the largest number of oranges per acre of the finest quality, ripe promptly "at the best time," can be grown, and in consequence such

American Bee Journal

ground has a real value away beyond that yet ascertained or considered.

I do not say the time is near when all groves will give a return of \$1800 an acre, or \$800 an acre, or even far less. I freely grant it is possible even under the most favorable condition to so treat a grove of oranges so that you won't get over \$100 an acre, and, in fact, so you ought not to get anything; but all such possibilities prove nothing so long as it remains a fact that one might secure a return of \$1800 or \$800, or even \$400 an acre. Conceding all this, and it still remains true that an acre of ground on which can be grown the finest quality of the Early Washington Navel orange in perfection, is cheap property (if it has convenient market and plenty of water at small cost) at even \$1000 an acre for "bare ground," and there is plenty of money in doing so, if you sell the bearing orchard for \$1500.

Whether land is cheap or not depends upon what revenue it may be compelled to yield—not first cost.

Glad to have you, reader, write me for such further information as you may desire, always mentioning having seen this in the American Bee Journal.

E. S. WEEDEN,
Pres. Calif. Land & Development Co.
Oroville, Butte Co., Calif.

"The Great Destroyer" is the subject of a great speech by the Hon. Richmond P. Hobson, Congressman from Alabama, on the liveliest topic of the day—the temperance question. We wish that every reader of the American Bee Journal would send for a free copy. It contains the most and best ammunition on the subject we have ever seen in print. While we do not

fully agree with Mr. Hobson's final method of destroying the Great Destroyer, we do agree with his attitude toward it, and are satisfied he is right in his comprehensive investigations of the subject. Ask for a copy of it. Address, Hon. Richmond P. Hobson, care House of Representatives, Washington, D. C.

"A Year's Work in an Out-Apiary" is the name of a booklet by G. M. Doolittle, the well-known honey-producer of New York State. He tells how he secured an average of 11½ pounds of honey per colony in a poor season. It is fully illustrated, and tells in detail just how Mr. Doolittle has won his great success as a honey-producer. The price of the booklet is 50 cents, postpaid, but we club it with the American Bee Journal for a year—both for \$1.30. Every bee-keeper should have a copy of this booklet, and study it thoroughly. Address all orders to the American Bee Journal, 117 North Jefferson St., Chicago, Ill.

Bee-Keepers' Guide"

This book on bees is also known as the "Manual of the Apiary." It is instructive, interesting, and both practical and scientific. On the anatomy and physiology of the bee it is more complete than any other standard American bee-book. Also the part on honey-producing plants is exceptionally fine. Every bee-keeper should have it in his library. It has 544 pages, and 295 illustrations. Bound in cloth. Price, postpaid, \$1.20; or with a year's subscription to the American Bee Journal—both for \$1.90. Send all orders to the office of the American Bee Journal,

BEESWAX WANTED.—We are paying 28 cents, cash, per pound for good, pure yellow beeswax delivered at our office. If you want the money promptly for your beeswax, ship it to us, either by express or freight. A strong bag is the best in which to ship beeswax. Quantity and distance from Chicago should decide as to freight or express. Perhaps under 25 pounds would better be sent by express, if distance is not too great. Address, GEORGE W. YORK & CO., 117 N. Jefferson St., Chicago, Ill.

Please mention Am. Bee Journal when writing.

White Sweet Clover Seed

Sweet Clover is rapidly becoming one of the most useful things that can be grown on the farm. Its value as a honey-plant is well known to bee-keepers, but its worth as a forage-plant and also as an enricher of the soil are not so widely known. However, Sweet Clover is coming to the front very fast these days. Some years ago it was considered as a weed by those who knew no better. The former attitude of the enlightened farmer today is changing to a great respect for and appreciation of Sweet Clover, both as a food for stock and as a valuable fertilizer for poor and worn-out soils.

The seed can be sown any time. From 18 to 20 pounds per acre of the un-hulled seed is about the right quantity to sow.

We can ship promptly at the following prices for the white variety:

Postpaid, one pound for 30 cents, or 2 pounds for 50 cents. By express f. o. b. Chicago—5 pounds for 80c; 10 pounds for \$1.50; 25 pounds for \$3.50; 50 pounds for \$6.50; or 100 pounds for \$12.00.

If wanted by freight, it will be necessary to add 25 cents more for cartage to the above prices on each order.

George W. York & Co., 117 N. Jeff. st., Chicago, Ill.

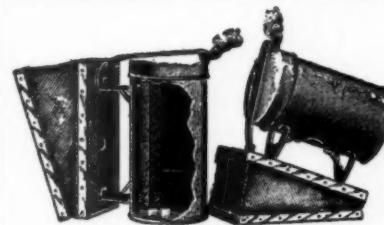
BARNES' Foot-Power Machinery

Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 shaft hives with 7-in. cap, 100 honey-racks, 500 broad-frame, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

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Danzenbaker Victor Bee-Smoker



3½X6 INCHES.

Shown above in a standing and reclining position. In the latter the grate is under, that it may have a full head of smoke ready on the job at a touch of bellows.

The perpendicular Fire-Draft Grate, forcing air both ways, makes and cools the smoke, forming a Double Fire-Wall for securely riveting the double-braced brackets to the cup, that is firmly bolted to the valveless bellows by Locked Nuts.

The One-Piece cap can not clog. It is the coolest, cleanest, strongest, best, and largest net capacity of all smokers, selling at one dollar (\$1.00). We guarantee satisfaction.

Price, postpaid, \$1.00; or with the American Bee Journal one year—both for \$1.70. Address,

GEORGE W. YORK & CO.,

117 N. Jefferson St., CHICAGO, ILL.
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Both COMB and EXTRACTED

Write us before disposing of your Honey Crop.

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HILDRETH & SEGELKEN,
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Successors to the York Honey & Bee-Supply Co.)

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Send for Catalog.

Enough said!

THE SECRET OF Success in Bee-Keeping Is to Keep Your Colonies Strong; to do This You Must Have GOOD LAYING QUEENS

Which We Guarantee at the Following Prices:

Golden 3-Band Italian Carniolan

Untested—1 for \$1.00; 6 for \$5.40; 12 for \$9.60; 25 for \$17.50

Tested—1 for \$1.50; 6 for \$8.40; 12 for \$15.60; 25 for \$30.00

Nuclei with Untested Queen—1-frame, \$2.50; six 1-frame, \$15.00

" " " 2-frame, \$3.50; six 2-frame, \$20.40

" " " Tested 1-frame, \$3.00; six 1-frame, \$17.40

" " " 2-frame, \$4.00; six 2-frame, \$23.40

The Drones used in our Apiary for Mating purpose are reared from the very best selected Queens, which is as necessary as the selecting of a good Queen for Queen-Rearing. For good Queens and quick service you can not do better than place your order with us. We guarantee safe arrival and satisfaction. Directions for building up weak Colonies will be mailed to you for 10 cents.

The above Queens are all reared in Separate Yards.

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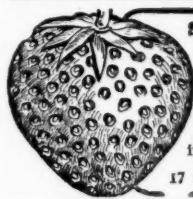
W. J. LITTLEFIELD, R. F. D. No. 3, LITTLE ROCK, ARK.

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CAPONS bring the largest profits—100% more than other poultry. Caponizing is easy and soon learned. Capons sell for 30c. a pound, while ordinary poultry brings only 15c. a pound. Progressive poultrymen know these things and use

PILLING CAPONIZING SETS Sent postpaid, \$2.50 per set with "Easy-to-use" instructions. We also make *Poultry Marker*, 25c. *Gape Worm Extractor*, 25c. *French Killing Knife*, 500. Booklet, "Guide for Caponizing," FREE. G. P. PILLING & SON CO., 23d & Arch Sts., Philadelphia, Pa.



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I grow Strawberry, Raspberry, Blackberry, and other small fruit Plants, Grape Vines, Shrubbery, etc. My FREE catalog tells the truth and quotes fair prices for good stock true to name. If interested, write today.

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Write for Fall Discounts—we can save you money.

C. C. Clemons Bee-Supply Co.
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FIGURE THIS OUT FOR YOURSELF

If you buy Bee-Supplies NOW that you will need in April,
you save money at the rate of 12 percent on the \$.

THREE PERCENT is the amount of our early order discount on cash purchases in January. January to April is just three months— $\frac{1}{4}$ of a year. Now 3 percent for 3 months is interest at the rate of 12 percent per year—so you see why we urge early orders accompanied by cash **this** month.

ANOTHER reason is that we can serve you better now than three months hence. In a few weeks we will be putting up carload shipments for our dealers and distributing centers, and every effort in our big plant—the largest establishment in the world devoted to the manufacture of bee-supplies—will be directed to filling rush orders. You will be just as anxious for your goods as our other patrons, and will deserve and receive the same attention—no matter what the amount of your order may be, but

We can Serve you Better Now

and we want to make it worth your while to place an early order. Try this on a part of your list anyway. Saving at the rate of 12 percent per year ought to interest everybody.

We Manufacture Everything in Bee-Supplies

Get our 1912 catalog which gives descriptions, illustrations and prices on everything from bee-hives to bee-books, from frames to comb foundation. **Get this Catalog NOW.**

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American Bee Journal

You will be a busy bee if you locate in the Fertile Northwest

Bee-Culture in the Northwest should prove surprisingly attractive to the workers with Bees in other parts of the country.

Climate

The great diversity of climate due to the varied altitudes and topographic features, affords a wide range of selection in locations, in this dry, mild, and equable region.

Bee-Food

The wonderfully fertile soil produces the finest of clovers, alfalfa, peas, etc., so important in the production of a good and pure article of honey. Even the common sage-brush is noted for its value in honey-production.

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The vast acreage in orchards in the Northwest should prove a strong argument to an experienced bee-worker to move to this very fertile country. Orchards and hives have been most profitably combined already, in many instances. The superiority of Northwestern fruit-blooms aids to produce a superior quality of honey, and the bees perform a reciprocal service in fruit-pollination.

Markets

Nowhere are there more stable and remunerative markets for good honey. The many large cities, the rich mining camps, and Alaska, provide the best of markets right at home, at top prices.

Literature

For free literature relating to the Northwest, and particulars of Low Colonist, Homeseeker, and Summer Excursion Fares, write to

L. J. BRICKER,
General Immigration Agent, OR
123 Northern Pacific Bldg.,
SAINT PAUL, MINN.

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SAVES { TIME HONEY MONEY } At All Dealers
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If your Dealer does not keep them, order from Factory, with Complete Instructions.

R. & E. C. Porter, Mfrs.
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Anderson's Famous Texas Queens



Italians Carniolans Banats

The best to be found of each. Will be ready as soon as you can use them. Let me book your orders now.

My Queens are Guaranteed Pure, Vigorous & Healthy

PRICES :

Untested, each, 75 cents; per dozen, \$8.00.
Tested, each, \$1.25; per dozen, \$12.00.

Circular Free.

GRANT ANDERSON,
San Benito, - Texas

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QUEENS! QUEENS!

Italians AND Carniolans

The Keith System of Breeding insures the best Queens that can be produced. My Strain is the result of 20 years of careful breeding and selection. I feel confident that few, if any, can surpass them.

Color has not been my special object; but to produce bees that will bring in honey, and store it in supers where it is wanted. I am also paying a great deal of attention to Gentleness among my bees, so that almost any one can handle them.

Annual importations of Queens has kept my stock absolutely pure.

Prices as follows:

	1	6	12
Virgins.....	\$.65.....	\$ 3.50.....	\$ 6.00
Untested.....	1.00.....	4.00.....	7.00
Warranted....	1.25.....	5.50.....	11.00
Tested.....	1.50.....	7.50.....	13.00
Select Tested, \$2.00 each.			
Breeder, \$3.00 and up.			

Nuclei and Full Colonies.

Bees by the Pound. Write for Circular. Apiaries inspected for brood-diseases.

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83½ Florence St. Worcester, Mass.
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Special Prices on Bee-Goods For 60 Days. Dovetailed Hives

1½-story, \$1.35 each. Hoffman Frames, \$2.25 per 100. Just make us a Bill of the Goods you might need for 1912, and we will quote Lowest Prices. We make all kinds of Bee Goods. **FINE QUEENS** at all times to be had. Untested, 75 cts.; Tested, \$1.00.

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Results Count

When you buy **Comb Foundation** you look for **RESULTS.**

The Dittmer Process Comb Foundation is the right **SMELL**, the right **TASTE**, and the right **FIRMNESS** to give Best Results.

The Dittmer Process Comb Foundation is so like Beeswax the Honey-Bees would **SHAPE** and **MOULD** for themselves, it makes it very acceptable to them. This assures a **Full Capacity Honey Crop**, and remember, to you, Mr. Bee-Keeper, **Honey is Money.**

A Liberal Discount Offered on all **Supplies.**
Write for Prices.

Gus Dittmer Company, - Augusta, Wisconsin.

50,000 Copies "Honey as a Health-Food" To Help Increase the Demand for Honey

We have had printed an edition of over 50,000 copies of the 16-page pamphlet on "Honey as a Health-Food." It is envelope size, and just the thing to create a local demand for honey.

The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last is devoted to "Honey Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey as a food, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp: 50 copies for 90 cents; 100 copies for \$1.50; 250 copies for \$3.00; 500 for \$5.00; or 1000 for \$9.00. Your business card printed free at the bottom of front page on all orders for 100 or more copies.

Address all orders to

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Is the only city located on both Water and Rail. Shipping can be done to all North Shores by either, but all those on boat lines can save freight by boat, especially those in North Michigan.

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SPECIAL PRICES on Poultry, Feeds, Shells, Grit, Charcoal, etc.

Beeswax Wanted. Send for Our 1912 Catalog.

S. J. GRIGGS & CO.

Erie St., near Monroe,

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INSURES your crop against **DROUGHT**

Our experience in 1910 and 1911 has proved that good crops can be grown with less than eighteen inches of rainfall. Those who followed the **Campbell System** in 1910 had a crop in 1911.

Don't Take Any Risks for 1912

Campbell's publications explain the system.

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Campbell's Soil Culture Manual	-	\$2.50
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When you write ask about the **Campbell Correspondence School.** 8Atf

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Buy Honey and Beeswax.

Catalogs Free.

Toepperwein & Mayfield Co.

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San Antonio, Texas.

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B. A. Hadsell, one of the most experienced and largest bee-keepers in the world—has made six trips to Mexico, investigating that place as a bee-country, and is so infatuated with it that he is closing out his bees in Arizona. He has been to great expense in getting up a finely illustrated 32-page booklet, describing the tropics of Mexico as a Bee-Man's Paradise, which is also superior as a farming, stock-raising and fruit country. Where mercury ranges between 55 and 98. Frost and sun-stroke is unknown. Also a great health resort. He will mail this book FREE by addressing,

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B. A. Hadsell, Lititz, Pa.

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Early (FROFALCON) Queens "ITALIANS"

February and March deliveries—for Untested, \$1.50 each; April, \$1.25. Tested Queens, 50 cts. additional; Select Tested, \$1.00 extra. Breeders, prices on application.

JOHN C. FROHLIGER,

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Or Berkeley, Cal.

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Of **BEE-KEEPERS' SUPPLIES** for the next 4 months. Too big Stock to carry over. Write your wants; I will make price to suit.

Sept. 26, 1911.

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DENVER, COLO.

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For Sale—15 Eggs \$1.00

Indian Runner Ducks—White and Fawn.
2-3 J. F. Michaal, Rt. 1, Winchester, Ind.

Please mention Am. Bee Journal when writing.

American Bee Journal

HONEY AND BEESWAX~

CHICAGO, Feb. 27.—The demand for honey during the month of February hardly met expectations, yet fancy comb honey was scarce and sells at 17@18c per lb., with the off grades at from 1@5c per lb. less. Extracted is steady, but not moving in quantities. White brings 8@9c per lb.; amber, 7@8c per lb. Beeswax is steady and sells at from 30@32c.

R. A. BURNETT & CO.

INDIANAPOLIS, Feb. 26.—White comb honey sells at 18c per pound in 10-case lots. Amber grades in slow demand and at lower figures. Best extracted sells at 11@12c per pound in 5-gallon cans. Jobbing houses are well supplied, but producers are not now offering any honey. Beeswax is in good demand, and produces are being paid 3c per pound.

WALTER S. PODUER.

CINCINNATI, Feb. 19.—The market on comb honey has fallen off somewhat, only demand for fancy white selling in retail way at \$1.00 per case; and jobbers at \$3.60@\$3.75, according to quality. Extra white extracted in 60-lb. cans at 10c; light amber in 60-lb. cans at 8@9c; amber in barrels, 7@8c. Beeswax in fair demand at \$33 per 100 lbs.

The above are our selling prices, not what we are paying.

C. H. W. WEBER & CO.

KANSAS CITY, Mo., Feb. 20.—We are having a better demand for comb honey, but no change in prices. Receipts light. We quote: No. 1 white comb, 24-section cases, \$3.25; No. 2, \$3.00; No. 1 amber, \$3.00; No. 2, \$2.75. Extracted, white, per pound, 8@9c; amber, 8@9c; dark, 5@6c. Beeswax, per lb., 25@28c.

C. C. CLEMONS PRODUCE CO.

SAN FRANCISCO, Feb. 28.—The demand for honey the past month has been more marked, and there is still a lot unsold. Comb honey, 15@18c; water-white extracted, 9@10c; light amber, 8@8½c; lower grades, 5@6c. Beeswax, 27@30c per pound for light in color, and 23@26c for dark.

J. C. FROHLIGER.

DENVER, Feb. 20.—Supply of strictly white comb honey is about exhausted, and prices as a consequence are higher than they otherwise would be, as the demand is light. We quote No. 1 white comb honey, per case of 24 sections, \$3.60; No. 1 light amber, \$3.35; No. 2, \$3.15. White extracted, per pound, 9c; light amber, 8c; strained, 6@7½c. For clean yellow beeswax we pay 26c cash, or 28c in trade, delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
F. Rauchfuss, Mgr.

BOSTON, Feb. 28.—Fancy white comb, 17@18c; light amber, 15c; amber, 14c. Fancy white extracted, 10@11c; light amber, 9@10c; amber, 9c. Beeswax, 30c.

BLAKE-LEE CO.

NEW YORK, Feb. 28.—We have practically nothing new to report as to the condition of the market. Very little comb honey is arriving, and what little lots do come in find ready sale at prices ranging all the way from 14@17c for the white, and from 11@13c for dark and amber, according to quality and style of package. As to extracted honey, the market is decidedly quiet. Ever since the first of December the demand has been gradually decreasing, and with large stocks on hand prices have shown a downward tendency, and are likely to decline still further.

We quote nominally: California white sage at 9c; Western white alfalfa at 8c; Western light amber alfalfa at from 7@7½c; in quantity lots even these prices would have to be shaded in order to effect sale. Beeswax steady at from 30@31c per lb.

HILDRETH & SEGELEN.

CINCINNATI, Feb. 27.—We see nothing exciting in the demand for honey; there seems to be plenty of honey of all kinds. We are selling fancy comb honey in 24 sections, glass front cases, at \$3.75 to \$4.00 a case. It is an imposition on the consumer to sell lower grades, and hereafter we shall absolutely refuse to buy it, for on each transaction we not only lose money, but spoil the trade for good honey. For strictly fancy water-white extracted table honey we are getting from 9@10c a pound, in crates or boxes of two 60-pound cans each; for amber honey in barrels from 7@8c. For strictly choice, bright yellow beeswax we are paying from 30@31c a pound delivered here, and for lower grades from 12@2c a pound less.

THE FRED W. MUTH CO.

Engravings for Sale.

We are accumulating quite a large stock of bee-yard engravings and other pictures used from time to time in the American Bee Journal. No doubt many of them could be used by bee-keepers in their local newspapers, on their letterheads, on souvenir cards, or in other profitable or interesting ways. If we can sell them it will help us to pay for others that we are constantly having made and using in these columns.

We do not have a catalog or printed list of the engravings, but if you will let us know just which you want we will be pleased to quote you a very low price, postpaid. Just look through the copies of the Bee Journal and make your selection. Then write to us.

GEORGE W. YORK & CO.
CHICAGO, ILL.

What You Get at CINCINNATI

Some things in addition to service, prompt and satisfactory shipments, and a real desire to please you, that come from the central point of distribution.

Root's Supplies—new and clean, and of the finest quality. New hives, new foundation, new sections—every-thing fresh from the factory in carload shipments.

Early-Order Discounts for Cash—Three percent for January; two percent for February—a worth-while saving to which you are entitled. Don't fail to get in your order at once.

Saving on Freight or Express—By buying here, part of the cost of shipment is borne by us. You pay only from Cincinnati. This is quite an item on large orders, and our patrons are coming to appreciate it more and more.

Just bear these facts in mind, and begin the New Year right by ordering your season's supplies from

C. H. W. Weber & Co.

2146 Central Ave.

CINCINNATI, OHIO

"Falcon" FOUNDATION

PROCESS OF MANUFACTURE.—The very best grades of beeswax, clarified without that acid taste or odor which is so objectionable in some makes, sheeted by our heavy pressure process, reduced and polished by smoothrolls, allowed ample time to cure, is finally passed through embossed power mills, resulting in that clear, absolutely pure product, **FAMOUS THE WORLD OVER, "FALCON" FOUNDATION.** No detail, from the buying of the beeswax to the packing of the product, is slighted. The care and skill in cleansing, the absolute purity from all foreign matter, the enormous pressure in sheeting into continuous belt-like sheets, the transparency and perfectness of the finished product, with the appearance and smell of the hive itself (for it is indeed the product of the bees, purified, embossed and returned for their use), has made a product, "**FALCON" FOUNDATION**, which has been chosen by the bees themselves as the acme of foundations. The "**FALCON" WAY** is **OUR WAY** developed in thirty years of foundation manufacture.

QUALITY

"**FALCON" FOUNDATION** made by our special methods has won a reputation on account of its perfect cell formation, non-stretching qualities, and the readiness with which bees begin work upon it. Our section foundation is perfectly clear, and with it is produced those pearly white sections of honey so much admired. Our brood foundation is particularly adapted for full sheets in brood or extracting frames. Its strength eliminates all stretched cells in which drone-brood is reared or elongated cells in which no eggs at all are laid. Use "**FALCON" FOUNDATION** and satisfy your bees.

SAMPLES

WE GUARANTEE every sheet equal to samples in every particular. Drop us a card for samples and they will be sent postpaid.

Get "**FALCON" FOUNDATION** of our nearest dealers. If you don't know the names drop us a postal.

W. T. Falconer Mfg. Company

Where the good bee-hives come from

C. C. Clemons Bee-Supply Co.
130 Grand Ave., Kansas City, Mo.

W. T. Falconer Mfg. Co.
117 North Jefferson Street, Chicago, Illinois.

You Want a Home

WHERE pure water is plentiful, comes when you wish, and stays when you will;

WHERE cyclones are unknown, and blizzards impossible;

WHERE crops never fail from drouth, and the unhoused harvest is never damaged by storms;

WHERE your stock can feed and fatten on pastures that are always green; and you can work in your fields with profit and pleasure every day in the year—except Sunday;

WHERE you can grow to perfection all the pleasant fruits, and all else that can contribute to make your home a paradise;

WHERE you can raise two crops of some things (on the same ground the same season), and continu-

ous crops of other things, giving you "a money harvest" to sell every week in the year;

WHERE "sunny days" cover two-thirds the time, and yet sunstroke or "death or damage from heat" are unknown;

WHERE bees banquet in fields of never-fading flowers, securing rich stores of honey—which they do not consume "in wintry hours;"

WHERE you can grow practically all the nuts and fruits of commerce to perfection and in enormous quantities. Remember that Apricots, Almonds, Raisins, Figs, Olives and **Washington Navel Oranges** can not be grown in commercial quantities anywhere in the United States outside of California. Hence, a good price is assured, and over-production impossible.

YOU WANT A FAIRY FARM

WHERE you can (with the help of your boys) take the best care of it—thus forever ending the torturing ghost of "hired help;"

WHERE "your boys" will get rich on berry-patches, and "the women-folks" with poultry—as a by-product;

WHERE you can get more net cash every year

from ten acres than can be wrested from a quarter section of the best farm land in the Mississippi Valley, and all this while escaping the lonesome isolation and dreary drudgery inseparable from the larger farming.

You want to know all about this wonderful land. You can secure full and accurate information by writing to

Col. E. S. WEEDEN, OROVILLE, CALIF.

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